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UNITED STATES DEPARTMENT OF AGRICULTURE

• Agricultural Marketing Service
Agricultural Research Service

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The Bank-Charge-Account Plan and Retail Food Marketing

By Norman Townshend-Zellner

The widespread growth of bank (and other) charge-account plans implies a distinct possibility that retail food marketing, as well as the food producing, processing, and distributive sectors, indirectly, may become involved to a significant degree in a consumer credit operation. The purpose of this report is to explore the rather complex marketing implications posed by the injection of a combined credit mechanism and sales promotional device into the retailing of food. Special attention is devoted to the potential impact of the credit system on marketing costs and practices, retail prices and competition, and consumer demand. It is hoped that the analysis in this report, though primarily nonempirical in nature, may be useful (1) in furnishing insight into the currently developing "credit card" situation confronting retail outlets for agricultural products, and (2) in supplying an analytical basis that may assist interested research workers in further analysis and empirical studies. A brief case study of the bank-charge-account plan in one foodstore is included at the end of the article.

TOTAL CONSUMER CREDIT outstanding in the first 2 years of the 1950's increased from 10 percent of total disposable personal income to about 15 percent in the last 2 years of the decade. Paralleling this expansion was an intensive development of several types of consumer-credit systems—revolving credit, credit card, revolving check credit, and bank (or central) charge-account plans.¹ The bank-charge-account plan, now operated by about 110 banks in the United States, thus far has shown the greatest potential for affecting the marketing of agricultural products.

Although first initiated in 1950, the bank-charge plan did not catch on until the fall of 1958, when the Bank of America (California) and the Chase Manhattan Bank of New York entered into full-scale charge-account banking activities.² The

Bank of America in May 1960, reported³ that more than 300 foodstores—excluding meat markets and liquor stores—were using its charge-account plan. But so far, the Chase Manhattan Bank of New York and the American Bankers Association have reported no entry into the retail food field. This paper draws exclusively on the charge-account operations of the Bank of America.

More than 27,000 California retail stores, other businesses, and professional services participate in the Bank of America's charge-account plan. Foodstores thus constitute only about 1 percent of the total number participating. Approximately 2 million families hold⁴ the bank's credit cards, which, upon presentation, automatically provide charge-account facilities at any of the 27,000 member outlets denoted by a well-advertised charge-account plan insignia. The consumer pays

¹ For detailed review and analysis of the diverse credit systems, see Lelia Easson, "New Developments in Consumer Credit," *Journal of Home Economics*, 51 (10): 846-848, December 1959.

² Ibid., p. 848.

³ "300 California Food Stores Feature Bank Credit Plan," *Supermarket News*, May 30, 1960.

⁴ No data are available as to the number of card users as contrasted with cardholders.

no fee for the card, either initially or at the time of use. He receives a monthly bill from the bank itemizing all purchases made with the card. If the bill is paid within 25 days of receipt, no bank charge is made. For any unpaid balance outstanding for more than 25 days following receipt of the bill, a fee of 1½ percent per month is charged. The consumer is required to repay a stipulated minimum amount each month.

Retail stores that join the plan pay an initial signup fee of \$25 per location, and for \$1 per month they receive an imprinter that records the credit sale. The merchant may deposit his charge-account slips to his account at the bank daily and receive immediate credit for the deposit, less a deduction for the bank's fee.

The fee charged the merchant by the bank varies with the average size of sale. The charge may vary from 6 percent for quarterly sales averaging from \$3.50 to \$4.99, to 3 percent for sales ranging from \$25 to \$34.99. The impact of the bank fee on retail store costs, prices, and profits is, of course, at the heart of the matter. The merchant initially pays the full 6 percent upon surrendering his sales drafts—in other words, he receives 94 percent of their face value. Following computation of his quarterly average sales, he receives, if eligible, a refund based on the actual size of average sales. If his sales averaged \$26, for example, he is entitled to a refund of 3 percent—50 percent of the original amount withheld. An additional volume refund of 1 cent per draft is paid on the first 24,000 sales drafts over the first thousand submitted per quarter. All sales drafts in excess of 25,000 receive a 2-cent volume refund. All billings, collections, and losses become the responsibility of the bank.

Impact on Consumer

The issuance of a bank credit card to the consumer is identical with the granting of a specified line of credit which may be used at any of the retail outlets participating in the bank-charge-account plan. In using the credit card, the consumer creates an outstanding debt to the bank and experiences either, or both, of two spending effects:

1. If the consumer uses the card *to maintain previous purchasing patterns*, a counterpart

cash balance will accumulate to the extent that credit is substituted for purchases previously made by cash. The counterpart of the debt created is thus an accumulation of spendable funds, and the consumer's net worth remains unchanged.

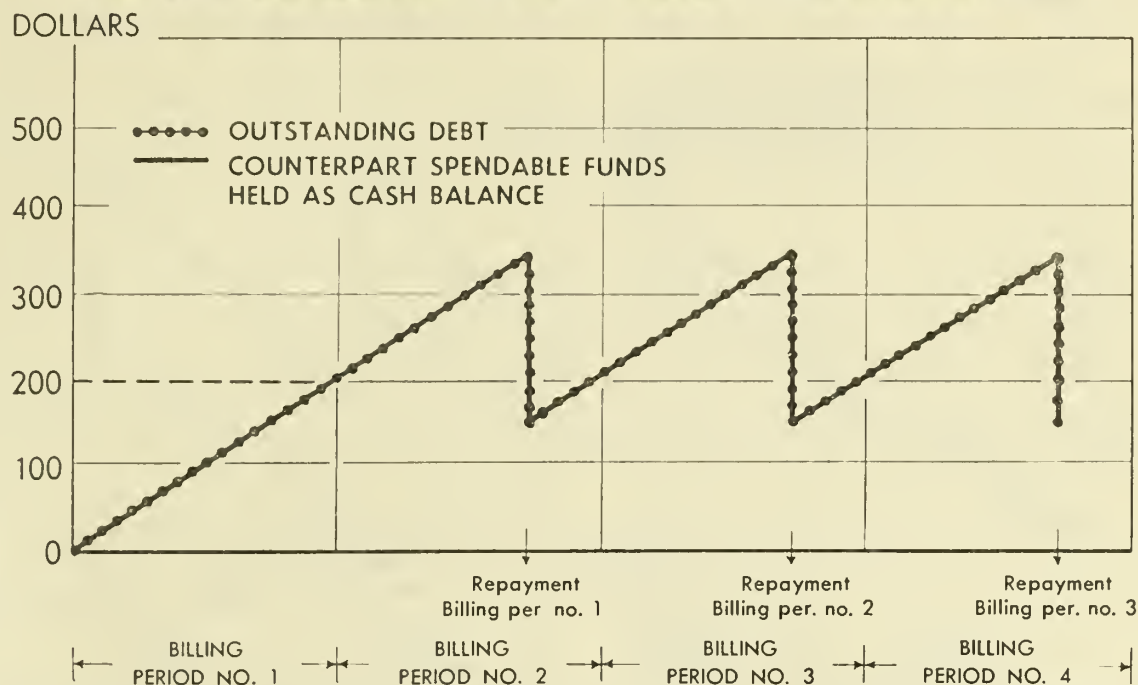
2. If the consumer uses the credit card *to upgrade previous purchasing patterns* (all else constant), the counterpart of the debt created is the actual spending of the additional funds provided by credit, accompanied by a corresponding decline in net worth.

In the discussion that follows these spending effects enable consumer credit-card use patterns to be analyzed into three basic variants. In practice, each use pattern ordinarily will consist of some combination of these variants.

The "unchanged purchasing—100 percent savings" variant.—In this variant, the consumer experiences the first spending effect by maintaining previous purchasing patterns and "saves" (does not spend) the accumulation of spendable funds. Consequently, in this variant, the credit card plays the role primarily of an accounting and convenience device, largely neutral in its impact on the pattern of consumer spending.

This variant facilitates consumer repayment of debt without incurring interest charges. In figure 1, for example, it is assumed that the consumer spends \$200 at a constant rate in each of the billing periods. By the end of the bank's first billing period, both the consumer's outstanding bank debt and counterpart spendable funds balance have risen to \$200. At the end of the billing period #1, the bank sends the consumer a bill in the amount of \$200, to be paid within 25 days of receipt. The consumer is also given the option of extending payment over a number of months by paying a minimum amount monthly, plus interest charges. Of course, any repayment method is consistent with the variant discussed in this section. However, if the spending pattern remains unchanged, it is rational behavior consistently to repay in full in time to avoid interest charges. Consequently, at the point designated in figure 1 as "Repayment: Billing Period No. 1" (not more than 25 days after billing date), the consumer repays the bank \$200. The lines designating "Outstanding debt" and "Counterpart spendable funds" fall accordingly, and then begin

"UNCHANGED PURCHASING— 100 PERCENT SAVINGS" VARIANT



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FIGURE 1

to rise again as the consumer continues the same pattern of credit-card use.

This variant of credit-card use, combined with repayment to avoid interest charges, bring about the following results:

1. The consumer gains all the usually cited objective and subjective advantages of the charge-account plan—convenience, no need for cash, once-a-month summary of all accounts, ability to buy large quantities of goods when desirable opportunities present themselves, fewer checks written per month, and so on.

2. The consumer experiences no decrease in net worth because of the debt created.

3. He gains the equivalent of an interest payment on the average counterpart spendable funds balance.

4. He experiences the impact on retail store prices of the bank's charge to the store for the credit service—see pages 91-101 for analysis of this impact.

5. By definition, the consumer's spending pattern has remained unchanged.

6. Nothing has occurred to limit his freedom to choose between credit-card retail outlets and non-credit-card outlets.

7. The consumer can "go off" the credit plan at any time without drawing on resources other than his counterpart spendable funds balance.

8. Economywise, an inflationary bias is created: (a) Potential spending power is increased (as consumers' spendable funds are increased); and (b) if spendable funds are held in checking or savings accounts, the monetary system's reserves are thereby increased, allowing a

"UPGRADED PURCHASING—100 PERCENT SAVINGS" VARIANT

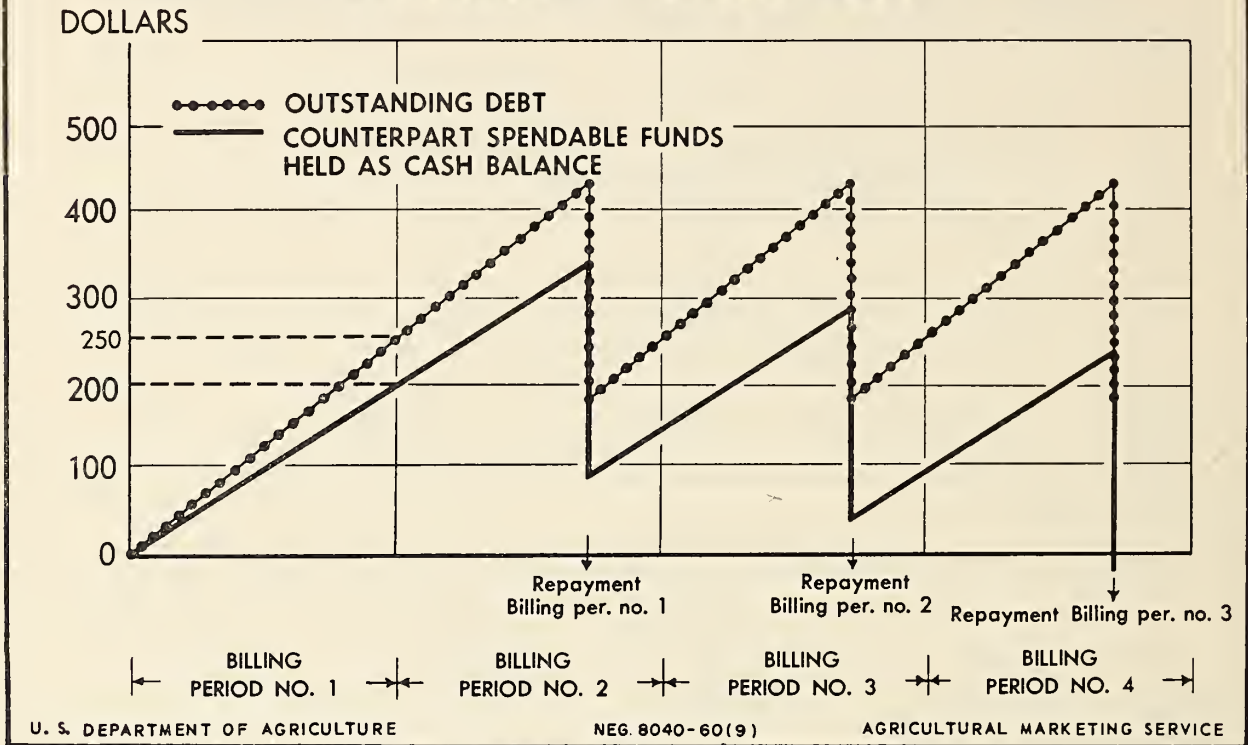


FIGURE 2

greater volume of bank credit relative to the volume of currency outstanding.⁶

"The upgraded purchasing—100 percent savings" variant.—In this variant, the consumer upgrades that portion of the previous purchasing pattern for which the card is used. Meanwhile, purchasing out of cash remains unchanged, and consequently the consumer spends for current consumption none of the counterpart spendable funds that accumulate as the credit card is used for purchases previously made on a cash basis. Given a fixed consumer income and limited financial resources, this variant of credit-card use

cannot be maintained continuously. Figure 2 is identical with figure 1, except that the consumer uses the credit card to upgrade by purchasing an additional \$50 worth of merchandise per month. By the end of the first billing period, an outstanding debt of \$250 has been created but, significantly, a counterpart spendable funds balance of only \$200 has accumulated, as only \$200 of the total spent by using the credit card has been substituted for cash previously spent.

Initially the consumer can pay the consistent monthly bill of \$250 by drawing down the counterpart spendable funds balance at the rate of \$50 per month. At this rate, as shown in figure 2, the spendable funds balance becomes deficient by repayment time for billing period #3. At this point, the consumer faces the inevitable situation brought about by the pattern (grossly exaggerated of course) of upgrading on credit-

⁶ Marcus, Edward, "The Impact of Credit Cards on Demand Deposit Utilization," *The Southern Economic Journal*, 26 (4) 314-316, April 1960. The inflationary impact discussed above abstracts from any potential "cost-price push" that may be generated by bank charges for the plan.

card purchases. The following choices present themselves:

First, the deficiency can be converted into a bank loan. This would occur automatically if the complete amount owed were not paid. Alternatively, the consumer could draw upon personal savings or other financial resources. But either solution would only temporarily postpone either the second or the third choice.

Second, the consumer could anticipate the deficiency and, in this case, reduce credit purchases by \$50 (to the level prior to upgrading) in the preceding billing period. This would mean overcoming the desire to spend beyond \$200 on credit card, and, crucially, the exercise of this restraint sufficiently in advance to avoid any deficit.

Third, the consumer could "make up" the \$50 deficit by forced—or at least unplanned—economizing in other items of the budget ordinarily purchased for cash. At the time for repayment of the bank bill, the \$50 deficit would be paid out of the consumer's cash on hand, thus leaving him "short" for later purchases ordinarily made on a cash basis. This choice comprises a technique whereby upgrading of purchases in the line offering credit is offset, so that the consumer can stay within the constraint of his total income, by economizing in lines where the expenditure is on a cash basis. It is significant to note that the preceding choice (reductions in credit purchases) must be planned and executed well in advance of the need to pay for such purchases, whereas the choice of economizing in cash lines occurs automatically—by default—as a result of a diminished amount of cash on hand relative to desired cash expenditures.

Results of this variant of credit-card use that differ from those cited for the first variant are:

1. The consumer's spending pattern initially can be upgraded in total for a very limited period, without a loan and interest charge but with a corresponding decline in net worth. Continuous upgrading on credit-card purchases, with or without a loan, is possible only by reducing expenditures in other lines.

2. If the consumer has upgraded total purchases and thereby substantially drawn down or exhausted his accumulated spendable funds balance, a tendency would be created to confine purchasing to credit-card outlets in order to set aside cash to meet the coming bank bill. It is difficult for the consumer to stop buying on

credit card within a short period, say a month, immediately subsequent to extended use of the card characterized by extensive upgrading. Such action would take drastic economizing or an outside source of funds in order to finance the double burden on current income of: (a) Paying for all current purchases out of cash; and (b) repaying the bill for the previous month's purchasing. Thus, a fundamental reason "tying" consumers to credit outlets (once they have drawn down their counterpart spendable funds balance by upgrading) is due to the fact that each credit purchase frees cash from current income to meet the oncoming bill. In this sense, credit outlets can expect repeat business from credit-card holders following the variant discussed in this section.

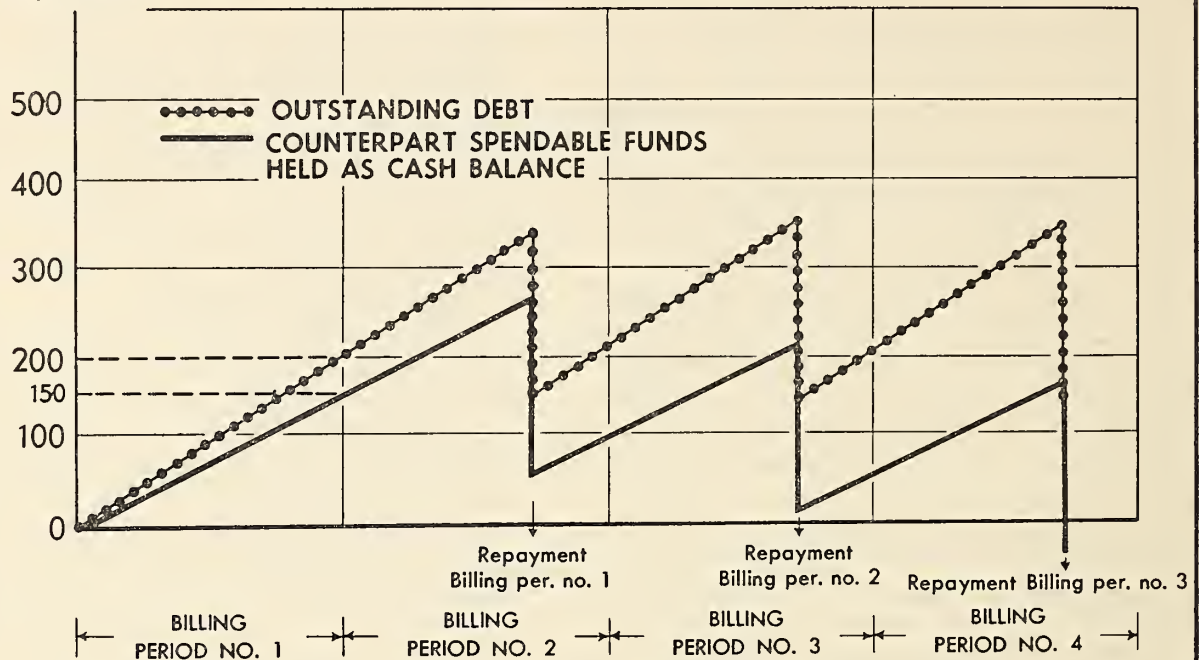
3. The proximate impact of this variant of credit-card use is inflationary. The increased credit extended by the bank to consumers is immediately reflected in increased demand for goods and services and increased money supply. In a community, the impact would be felt in the form of a major injection of spending as consumers, receiving their credit cards, began to upgrade purchases and increase their outstanding debt position. After complete introduction of the card in the community and extension of credit to the limit desired by consumers, the impact would be felt only in periods of contraction and expansion of credit by consumers in holiday seasons and the like, when incidentally, purchases could be increased to a greater degree not only because of the additional credit available, but because of its availability in lines formerly on a cash basis.

4. To the extent to which consumers convert their charge accounts to bank loans, the interest payments represent a change in the pattern of expenditures and must be offset by economizing in other lines. This results in the bank becoming an effective competitor (aside from any potential impact of the credit service on retail prices) for a share of the consumer's dollar.

"The unchanged purchasing—less than 100 per cent savings" variant.—In this variant, the consumer uses his credit card, without upgrading, in an unchanged purchasing pattern. In figure 3, this is indicated by the outstanding debt of \$200 at the end of the first billing period. Crucially, however, the consumer chooses to upgrade by

"UNCHANGED PURCHASING-LESS-THAN -100 PERCENT SAVINGS" VARIANT

DOLLARS



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FIGURE 3

spending at least some of the accumulated spendable funds balance, rather than saving 100 percent. Instead of setting this cash aside to meet oncoming bank bills and incurring no increase in indebtedness, the consumer *spends the counterpart cash itself in lines and outlets not necessarily tied to the credit-card plan.* Thus, at the end of the first billing period (fig. 3) there is again a discrepancy between the net outstanding debt and the spendable funds balance on hand. In this variant, the consumer can continue temporarily to upgrade his non-credit-card purchases until the growing deficit forces him into the situation of deciding on one of the same set of choices analyzed in the preceding variant of credit-card use.

The results of the variant shown in figure 3 are identical with the preceding one (fig. 2), with a major exception: In this case (fig. 3) credit extended by the bank can be used to increase

expenditures at *any* outlet of the consumer's choice and in the form of any good or service, subject to the restriction that the consumer must use the credit card at member outlets in order to accumulate the spendable funds balance later to be spent for additional purchases in other lines and outlets. In short, under this variant the expenditures representing upgrading by consumers can "leak" out of member stores using the charge-account plan.

Influence on consumer choice of retail outlets.—The charge-account plan furnishes consumer credit-card holders with strong motives to use the member retail outlets offering credit. Such outlets have differentiated themselves significantly from competing outlets as the consumer can gain the presumed advantages of the plan only by shopping at member stores. As the preceding analysis shows, motives (apart from those typi-

cally cited as "advantages" of the plan) that influence consumers to shop at member credit stores may include: (1) The opportunity to upgrade; (2) the ability to obtain counterpart cash to spend in other (nonmember) stores or lines; and (3) the opportunity to accumulate cash to pay oncoming bank bills covering credit purchases in previous months. Impelled by these and other motives, some credit-card users might be willing to transfer their shopping to foodstores offering the charge-account plan. As will be seen in the following section, such transfers play a major role in the cost, price, profit, and competitive aspects of the charge-account plan for retail foodstores.

Impact on Retail Foodstores

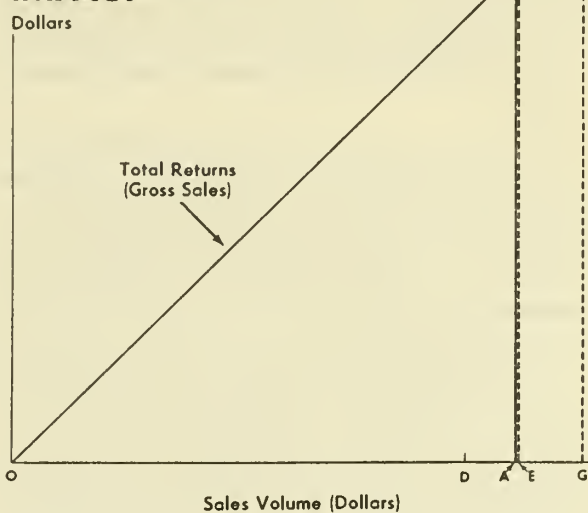
The impact of the bank-charge-account plan on sales volume, costs, competitive situation, and prices of member retail foodstores will vary markedly, depending upon whether the plan is in an initial or secondary stage of adoption. In any market area, the initial stage would be characterized by a relatively small percentage adoption of the plan by retail foodstores; the secondary stage would be distinguished by a substantial percentage of adoption. The two stages are interrelated in that the potential profitability of the plan in the initial stage can induce the competitive response that results in the more widespread adoption characteristic of the secondary stage.

The purpose of the various assumptions used in the subsequent analysis and examples is not so much to approximate actual conditions as to provide a technique of developing some general operating relations in the adoption and use of the charge-account plan by retail foodstores.

Sales and Total Revenue

Initial stage impact.—Possible sources of potentially increased sales and total revenues to the comparatively small percentage of firms that initially offer the plan in a given market area are: (1) New customers drawn from within the marketing area who have transferred their business from outlets not offering credit; (2) new customers drawn from contiguous, or even distant, market areas, for whom the attraction of using credit cards is sufficient to alter locational shopping preferences; (3) new transient customers—people "passing through" the area, and drawn to the store by display of the charge-account em-

TOTAL SALES OF CHARGE-ACCOUNT PLAN FOOD STORE: INITIAL STAGE IMPACT



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FIGURE 4

blem; (4) old customers who may upgrade their purchases by using the credit card.

Some combination of these categories is possible; for example, an old customer who previously bought about 40 percent of her purchases in the charge-account store, but after introduction of the plan switched to 90 percent. In this instance, the store would receive the impact of "new" business, plus any upgrading impact that may have occurred.

Figure 4 shows the impact of the initial stage in terms of a typical member foodstore. The diagram incorporates the following assumed conditions:

1. The store is initially at Sales Volume OA equal to Total Returns BA.
2. In the store's market area are six other competitive stores, all equal as to sales volume. In the initial stage, none of the competitors is assumed to have the plan, and thus the adoption rate is one-seventh, or 14 percent.
3. Twenty percent of the market area's consuming units (all equal in size and consumption) have bank credit cards.
4. Fifty percent of these consumers (10 percent of area total) desire to use the card for foodstore purchases if their accustomed outlet joins the plan—there is assumed to be a 50-per-

cent willingness rate of foodstore use for credit-card holders. Thus, the store in the charge-account plan could expect that approximately 10 percent of its old customers would begin to use the credit card. This "block" of old customers taken as equivalent to 10 percent of OA, is labeled DA (old business now on credit basis).

5. The 10-percent block of old business now using credit cards would upgrade foodstore purchases by 5 percent.⁶ This is shown by the increased volume of sales AE resulting in an increase in Total Returns (from AB to EF) equivalent to 0.5 percent of the store's original Total Returns AB.

6. Twenty percent of the consumer units that hold credit cards and desire to use them for foodstore purchases are willing to change outlets within the market area to achieve this goal. Thus, 2 percent of all consumers in the market area⁷—or 2 percent of all consumers in each outlet—would be willing to transfer. This implies that the store offering credit on the charge-account plan will attract 2 percent of the business of each of his six competitors. Since all are assumed to be equal in volume, the store would experience an increase in new business of 12 percent in sales volume, which, incorporating the assumed degree (5 percent) of upgrading would actually come to 12.6 percent. This is shown as EG. Thus, the store's final position is that of Total Returns GH, an increase of 13.1 percent over its initial Total Returns AB (by AE upgrading of old business, plus EG new business). On the alternative assumption of zero upgrading (all else constant) the store's increase in total revenue would be a still substantial 12 percent.

Secondary stage impact.—If, in the initial stage, member stores become increasingly successful in attracting customers from competitors, there

would be generated an impelling motive for rival stores to adopt the charge-account plan to regain customers and restore their competitive standing. Thus, in the hypothetical secondary stage, where the charge-account plan achieves fairly widespread adoption in a market area, the distribution of customers could be expected to tend to revert substantially (but not entirely) to the old pattern. The availability of bank credit would no longer serve to differentiate a very small percentage of stores.

In this secondary stage the sharp increases in sales experienced by early (first stage) adopters of the plan would tend to be cut back as new entrants to the plan regained lost customers. If *all* competing outlets adopted the plan, and all had the same percentage of credit-card customers, then increased sales by each store would depend entirely on the possibility of increased spending because of upgrading associated with the use of credit cards.⁸

In figure 5 (Secondary Stage, Impact "A"), it is assumed that 4 of the store's 6 competitors have adopted the credit-card plan, a 71-percent adoption rate. This would imply no change in the 0.5-percent increase in Total Returns (AE) because of upgrading by old business done on credit card, but it would cut the 12.6 percent initial stage gain from new business (EG) to a gain of only 0.84 percent. The two stores not offering credit lose 2 percent each of total sales, which now must split up among five stores. This results in a gain per store of 0.8 percent which, plus 5 percent upgrading, equals 0.84 percent. Thus, in the secondary stage of adoption, the store's volume of additional business resulting from use of the plan would decline severely (from 13.1 to 1.3 percent) as newly attracted customers returned to their previous shopping habits at stores now offering credit.⁹

It would be more realistic to incorporate some other changes in the assumed conditions that could reasonably be expected to have occurred over the period of time during which the store-adoption rate of the plan changed from 14 to 71 percent.

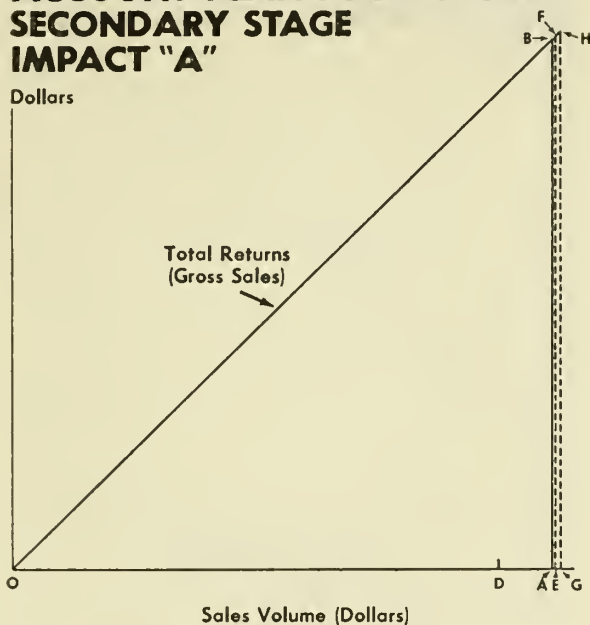
⁶This assumption of upgrading is an arbitrary one. Empirical investigation would be required to establish the impact of credit purchasing on upgrading. Examples and analysis that follow are equally valid for an assumption of zero upgrading.

⁷This is the product of 10 percent of all consumers in the market willing to use cards for food multiplied by 20 percent of this number willing to transfer between outlets.

⁸This phase of the analysis abstracts from the impact on demand of any induced price increases.

⁹Assuming zero upgrading, the decline would be from a 12-percent increase to a gain of only 0.8 percent.

TOTAL SALES OF CHARGE-ACCOUNT PLAN FOOD STORE: SECONDARY STAGE IMPACT "A"



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FIGURE 5

Figure 6 (Secondary Stage, Impact "B"), is therefore drawn for the same 71-percent adoption rate, with all conditions identical with figure 5 except the following: (1) The percentage of consumers in the market area holding cards has doubled, from 20 to 40 percent, and (2) the grocery-use willingness rate has increased from 50 to 60 percent. On this basis, AD (old customers using credit cards) increases from 10 to 24 percent of total sales. AE (5 percent upgrading by old customers) therefore increases (from 0.5 percent) to 1.2 percent of total sales. EG (volume purchased by new customers) increases (from 0.84 percent) to 2.02 percent,¹⁰ primarily because there are more foodstore credit-card users to be attracted. Even under these changed conditions, however, the major conclusion remains unchanged—in the secondary stage of adoption, the additional sales volume attracted in the initial stage on the basis

¹⁰ Calculated as follows: (24 percent credit-card grocery users) (20 percent willing to transfer) = 4.8 percent transfers from each noncredit store.

$$\frac{(4.8 \text{ percent}) (2 \text{ noncredit stores}) + (5 \text{ percent upgrading})}{5 \text{ credit stores}} = 2.02 \text{ percent.}$$

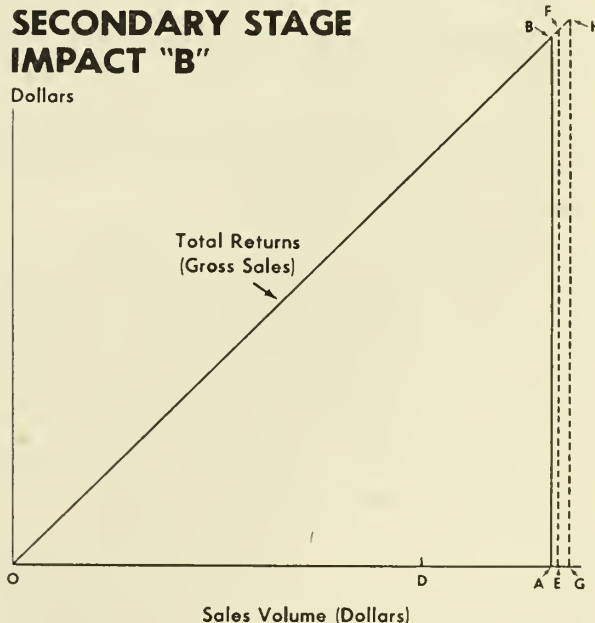
of credit tends to decline, primarily because of the entry of rivals into the plan and the consequent substantial drop in new customers for the initial stage adopters. Under our assumptions the increase in sales volume of 13.1 percent (fig. 4) for initial adopters falls to the neighborhood of 1.3 percent (fig. 5) to 3.2 percent (fig. 6).¹¹

Costs

The dominant cost factor in the charge-account plan is the bank's charge to the store for the credit service which varies typically from 3 to 6 percent of credit sales. Compared with a typical net-profit situation (2 percent of sales) in retail foodstores, the plan would seem to be eminently unprofitable from the cost standpoint, at least without compensating price increases. This line of analysis is correct for the secondary stage of widespread adoption of the plan, but crucially not for the initial stage, in which additional costs

¹¹ Under the assumption of zero upgrading, the 12-percent increase in sales volume in the initial stage falls to 0.8 percent (fig. 5) to 1.9 percent (fig. 6).

TOTAL SALES OF CHARGE-ACCOUNT PLAN FOOD STORE: SECONDARY STAGE IMPACT "B"



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FIGURE 6

TABLE 1.—*Bank charge-account plan: Merchant refund chart and fee schedule*¹

Quarterly average transaction amount ²	Original percentage withheld	Percentage of allowable refund	Basic fee
<i>Dollars</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
3. 50–4. 99	6. 00	0. 00	6. 00
5. 00–5. 99	6. 00	. 25	5. 75
6. 00–6. 99	6. 00	. 50	5. 50
7. 00–7. 99	6. 00	. 75	5. 25
8. 00–8. 99	6. 00	1. 00	5. 00
9. 00–9. 99	6. 00	1. 25	4. 75
10. 00–12. 49	6. 00	1. 50	4. 50
12. 50–14. 99	6. 00	1. 75	4. 25
15. 00–19. 99	6. 00	2. 00	4. 00
20. 00–24. 99	6. 00	2. 50	3. 50
25. 00–34. 99	6. 00	3. 00	3. 00

¹ Volume refund: An additional volume refund is made according to the total number of sales drafts submitted per quarter as follows:

First 1,000 net sales drafts, 0-cent refund per sales draft.

Next 24,000 net sales drafts, 1-cent refund per sales draft.

Over 25,000 net sales drafts, 2-cent refund per sales draft.

In no case shall the volume refund reduce the charge per sales draft below 21 cents.

Fees:

Initial fee: \$25 fee per location will be required when contract is signed.

Imprinter fee: Sales-draft imprinters rent for \$1 each per month, payable quarterly in advance.

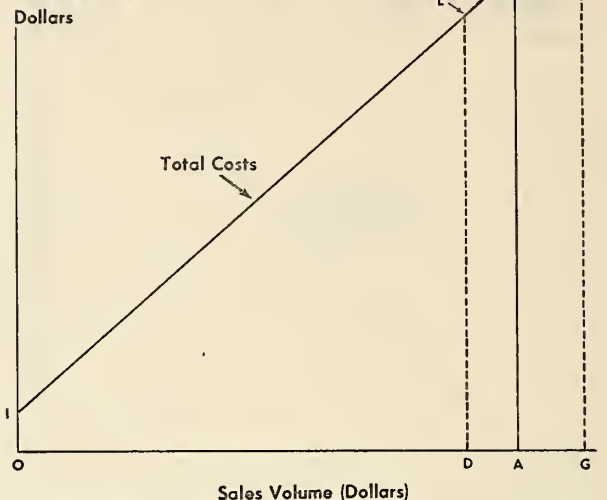
² No refund in event quarterly average transaction amount is less than \$3.50, the equivalent of the minimum sales-draft charge of 21 cents. Refund rates above \$35 unpublished and available to store upon request to bank.

may be associated with new business rather than loaded onto existing sales volume. And it is precisely the lure of initial-stage profits that induces the scattered degree of entry which, in turn, may kick off more widespread entry leading into the secondary stage of adoption.

Bank charges for the plan.—The bank's fee per dollar of credit sales declines with increases in the average size of individual sale (table 1). By setting a minimum dollar amount for credit purchases, a store can affect substantially its unit costs. For example, the bank fee on a \$10 sale is 25 percent less than its charge on a sale of \$3.50 (4.5 percent as compared with 6 percent).

A large retail organization wishing to offer credit to compete with bank-charge-account plans, of course, could always institute its own (or a cooperative) credit plan on the presumption that costs would be lower, and customers who

TOTAL COSTS OF CHARGE-ACCOUNT PLAN FOOD STORE: INITIAL STAGE IMPACT



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FIGURE 7

joined the plan would tend to be "tied" to the chain or group of chains offering the plan.¹²

Nature of costs—significance of ratio of new to old business on credit card.—The merchant's fee for the charge-account plan is a variable, or "out-of-pocket" cost,¹³ incurred only in conjunction with business actually done on credit cards. In figure 7, for example, the total fixed costs of the retail foodstore are *OI*, and the Total Costs line *IJ* (prior to adoption of the credit plan) rises at an assumed constant rate of 90 cents for each dollar increase in sales volume. This rate would consist of the variable operating costs and cost of goods sold. Prior to offering credit cards, the store is assumed to be at sales volume *OA*, with Total Costs *AJ*. It is assumed that the store offers credit, and experiences the initial-stage impact on sales, as shown in figure 4. In this case, the store now has a volume of credit sales equivalent to *DG* consisting of 10 percent of the old business now on credit card *DA*, plus *AG*, an addi-

¹² This type of competing organization has evolved in the case of the trading stamps-promotional device.

¹³ Except for the initial fee of \$25 per location and the imprinter rental fees.

tional 13.1 percent of new business on credit card.¹⁴

Assuming average sales of \$10 on credit card, the bank fee would be 4.5 percent of credit sales.¹⁵ Since DA is taken as equal to 10 percent of the sales volume, the total costs for sales volume OA show an increase of 0.45 percent of sales (as the 4.5 percent fee is spread over 100 percent of the sales volume) to AK. Thus, the new Total Costs line becomes the kinked ILKM. At the new Sales Volume OG, Total Costs are now GM, as contrasted with GN, what Total Costs would have been at Sales Volume OG without the additional fees paid for DG business done on credit card. MN, the additional cost for the credit business, is equivalent to 0.92 percent of Total Sales, OG.¹⁶

Figure 7 makes clear an easily overlooked point, which is that the bank's fee on credit-card sales—4.5 percent—approaches 4.5 percent of *total* sales only to the degree to which credit-card business approaches 100 percent of total sales. In early stages of adoption at least, credit-card business could reasonably be expected to be well below 100 percent of a store's total sales volume.

The retail outlet will experience a different impact on its variable costs per dollar of total sales, depending upon whether its additional costs for the charge-account plan are associated with old business (DA in fig. 7)—purchases that normally would have been made at the outlet irrespective of credit—or with new business (AG in fig. 7)—purchases by new customers attracted by credit, plus the upgraded portion of purchases by old customers. In the case of new business, the additional variable costs of the plan are associated *with increased volume* of sales. In the case of old business, the additional variable costs of the plan are associated with the same amount of sales and therefore are loaded on existing volume. Conse-

¹⁴ The AG new business includes upgrading of old customers.

¹⁵ This implies that the variable cost per dollar of sales imputed exclusively to the credit-card business (corresponding to DG) rises from 90 cents to 94.5 cents per dollar of credit-card sales volume.

¹⁶ Calculated as follows: OG Sales Volume=113.1 percent of OA. Sales on credit card, DG, equal 20.4 percent of OG Total Sales, $\frac{(AD+AG)}{OG}$.

At an assumed fee of 4.5 percent covering 20.4 percent of total sales, the unit cost spread over the entire sales volume is 0.92 percent (4.5×0.204).

quently, stores having a large ratio of new business on credit card to old business on credit card would experience a smaller increase in variable costs per dollar of sales than stores in a similar situation but with a lower ratio of new to old credit-card business.

The practical implication of this impact on costs is that in the initial stage, by definition, a store would tend to have a much higher ratio of new credit business to old—in figure 4 the ratio would be AG/DA (13.1 to 10)—and therefore would find its unit costs lower than those in the later stages where entrance of competitors had reduced its ratio (by the regaining of lost customers), and increased its unit costs—in figure 6, the ratio falls to AG/DA (3.2 to 24). It follows that the pressure of costs on prices will be greater in secondary than in initial stages of adoption. This impact on costs tends (in part) to account for the relatively high expected profitability of the plan in the initial stages—when the merchant has a legitimate expectation of attracting a sizable volume of new (credit card) business at the fairly nominal cost of approximately 4½ percent of new sales. At the same time, since the offer of credit is across-the-board to new and old customers alike, the merchant, especially in the early stages, may not feel that more than a very small proportion of his existing customers will use the credit service, and thus the loading of an extra 4½ percent on existing business will be inconsequential.

Impact on costs via store-operating practices.—

In addition to the direct bank charges, the retail store will experience changed costs as a result of the impact of the plan on its operation. The plan presumably is intended to substitute for the cost of the store's credit operation including such items as bookkeeping, bad debts, interest costs, and so on. When this is the case, this aspect of the plan may lower costs as well as free capital tied up in accounts receivable. But if the bank's charge-account plan and the personal credit of a local merchant are not substitutable, the merchant may have to maintain his own credit facilities in order to retain 100 percent of the customers who desire credit. In most of the retail food industry that does not offer credit there are no potential offsets to the cost of the charge-account plan by way of eliminating an

existing credit system. Other potentially cost-saving features are hypothetically possible to the extent that the credit-card user makes fewer trips to the store, does not have to coordinate shopping with the weekend paycheck, and has less need of check-cashing facilities.

The cost-raising features of the operation would include the extra checkout time involved in recording the customer's purchases on sales drafts, imprinting the draft with the customer's credit card, and telephoning the bank for approval of unusually high purchases. Additional costs also would be involved in handling, tallying, depositing, and checking the sales drafts and bank statements.

Dynamics of Adoption: Profitability, Competition, Costs, Prices, and Margins

For any given store price policy, the profit potential of credit-card operations in the initial stage of adoption would be greater than in the secondary stage when, for competitive reasons, a substantial number of the competing outlets in a given market might adopt the plan. Crucially, adopters of the plan in the initial stage would attract a much higher level of new business and experience a higher ratio of new business on credit cards to old business on credit cards, than would adopters in the secondary stage. Thus, although the exact impact of the plan on profits in the initial stage cannot be determined without empirical study, it can be inferred that at least the credit-card operation would exert much less pressure on costs and net profits in the initial than in the secondary stage of adoption. Moreover, in the initial stage, it is possible that, despite the pressure of increased costs, increased store profits could result with no increase in price. But the results in the secondary stages of adoption would seem to generate an inexorable pressure for credit-card outlets to raise prices and increase gross margins in order to maintain profits in the face of rising costs.

In the secondary stage, the extent of the increase in prices and margins would be greater (1) the greater the percentage of the store's total business done on credit card—a function primarily of the degree of adoption and use of the plan by consumers in the market area; (2) the higher the ratio of old to new credit-card business—a function primarily of the degree of adoption of the

plan by stores in the market area; and (3) the smaller the size of average purchase.¹⁷ Levying charges directly on credit-card users, including such policies as no trading stamps issued with credit purchases, seems to be the only alternative to increasing prices generally to all buyers. In the face of reported opposition to credit-card plans by some major chains, the possibility exists that the charge-account plan might be adopted rather heavily by a minority of stores and not at all by most stores. In this case, two distinct pricing and operating policies could emerge, depending upon whether the store offered the credit service, and consumers would have greater opportunity to avoid any possible rise in prices resulting from adoption of the credit service.

Initial stage impact.—Figure 8 analyzes the impact on profits of the credit-card plan in the initial stage of adoption. This diagram incorporates the following assumptions: (1) The Total Returns line reflects a given price policy existing prior to adoption of the plan; (2) OI fixed costs are 8 percent of sales;¹⁸ (3) BJ net profits (before taxes), are 2 percent of Sales; (4) the slope of the Total Costs line is 0.90;¹⁹ (5) OA sales volume represents some underutilization of store capacity; and (6) impact of credit cards on operating practices and costs is ignored.

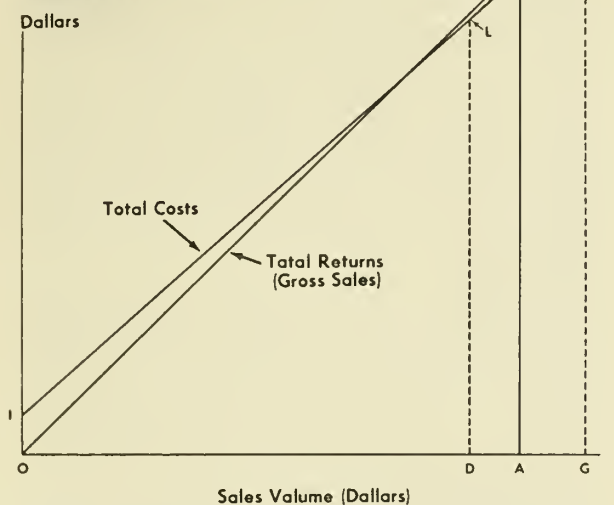
The assumptions of figure 4 are used to establish the character of the consumer market using credit cards and the consequent impact on store volume of sales. Prior to operation of the plan, the retail outlet is at sales volume OA, well beyond the break-even point, making profits BJ. With institution of the charge-account plan, AG more

¹⁷ Costs and benefits to the store via changed operating practices (because of credit cards) are not considered here.

¹⁸ A gross margin of 20 percent is assumed. Total fixed costs (OI) are defined hypothetically as all costs that would be incurred at zero output, or costs that would exist (except spoilage) if the store were open but did zero business. Empirically, this would include such items as skeleton store crew and administrative overhead. Total fixed costs are assumed to be 40 percent of the margin, or 8 percent of total sales.

¹⁹ The Total Costs line rises over the entire sales volume range from 8 percent of total sales at Zero sales volume to 98 percent of sales volume (at 100 percent of sales.) Thus, variable costs (all costs other than fixed) are assumed to rise uniformly at the rate of 90 cents per \$1 of sales volume.

PROFITS OF CHARGE-ACCOUNT PLAN FOOD STORE: INITIAL STAGE IMPACT



U.S. DEPARTMENT OF AGRICULTURE NEQ. 8045-60(9) AGRICULTURAL MARKETING SERVICE

FIGURE 8

volume is added on the basis of new credit-card business, while DA of old business sales volume converts to, and is done on, the credit-card basis. Thus, the new Total Returns is GH. There exists the high ratio of new to old business done on the credit-card basis (AG/DA) that would characteristically be experienced by an early adopter of the credit-card plan. The credit-card operation results in the new, kinked Total Costs line ILKM (see fig. 7 and p. 95 for method of derivation). IJN reflects the Total Costs line that would have prevailed for sales volume OG, had it been reached without the credit-card device.

Given the new volume of operations and the changed cost-revenue relationships, the impact on profitability may be analyzed best by considering separately the segments of old and new business done on credit cards. Given the old (precredit) price policy, the segment of *old* business considered *alone* always reduces the store's profit. At the old volume of sales, OA, the original profit was BJ. Since old business on credit card will always raise the Total Costs line (from ILJ to ILK), because of the added cost of the credit service, net profits will always be reduced (by JK, from BJ to BK). The added cost of the credit

service on *old* business thus always constitutes an offset in the overall net profit picture resulting from the credit-card operation. How large this offset will be depends on (1) the percentage of old business done on credit and (2) the size of the bank's fee. Under the assumptions of our diagram (AD=10 percent of old business on credit, and the bank fee is 4.5 percent) total costs increase by 0.45 percent of total sales and thus constitute that much of an offset to profits. Since profits are assumed to be 2 percent of sales volume OA, it can be inferred that if there were no upgrading or new business done on credit card, the store's net profits would have declined by 22½ percent (from 2 percent of OA to 1.55 percent of OA).

As a result of the segment of *new* business done on the credit card, three possibilities are opened:

1. A positive impact on profits occurs, and it outweighs the (always) negative impact on profits of old business on credit card. In this case, the credit-card operation will increase the net profits of the store.
2. A positive impact on profits occurs but does not outweigh the negative impact on profits of old business. In this case, the credit card operation will result in a decrease in total profits to the store.
3. A negative impact on profit occurs, and this, when added to the negative impact of old business, produces a marked decrease in total profits.

Two major cost factors determine the degree of profitability of the segment of new credit-card business. Because price policy has been assumed constant, revenue factors are not uniquely involved, and therefore the Total Returns line, though rising as a result of the new business, will retain the same rate of increase over AG, the volume of new business.²⁰ The first cost factor is related to the size of the bank's percentage fee, and the second depends on the rate of increase in (or slope of) Total Costs²¹—the higher the bank's

²⁰ Actually, if, as has been reported, credit-card users tend to buy more higher margin items than other customers, the total revenue would climb somewhat more sharply over the range of credit volume, DG, and, other things constant, thus provide a more profitable component of total volume OG.

²¹ Equivalent to the level of the marginal cost curve, assumed horizontal.

percentage fee and the higher the rate of increase in total costs, the less profitable will be the segment of new business.

In figure 8, the segment of new business brings in additional profits to the store at a rate of 10 cents for each dollar of new volume (since total costs are assumed to rise at the rate of 90 cents per dollar of sales volume).²² Normally, therefore, the store would expect from AG dollar volume of new business, a net profit of AG multiplied by \$0.10. But because of the bank's fee, an additional 4½ cent cost on each additional dollar of sales must be deducted, or AG multiplied by \$0.045. In this case, the net contribution of the new business segment to store profits is positive, equaling AG times \$0.055. Thus, the final profit rate (per dollar of sales volume) on new business is always the slope of the Total Returns line minus (1) the slope of the Total Cost line, and (2) the bank fee in cents per dollar of sales. Under the conditions assumed, the bank fee would have to be above 10 percent for the segment of new business to contribute a negative impact on store profits. On the other hand, at a bank rate of 4½ percent, other conditions as assumed, total fixed costs would have to be less than 2½ percent of sales for the slope of the Total Cost line to be steep enough for new credit-card business to contribute negatively to store profits. It appears, then, that under *usual* store and credit-plan operating conditions, the segment of new business on credit card, considered alone, will *always* make a positive contribution to store profits, and thus, possibility (3) must be excluded from consideration.

Whether the normally positive contribution to the store's net profits of the new credit-card segment of business outweighs the always negative impact of old business on store profits will depend primarily on (1) the *ratio* of new credit-card business to old and (2) size of the bank's fee. The higher the ratio of new to old business on credit card, the greater the possibility of an overall positive contribution of the credit-card device to store net profits. In the case of figure 8, the positive contribution is (AG) (\$0.055), while the negative contribution is (DA) (\$0.045) and there is a net positive contribution, (AG).

²² Again, this is based on the underlying assumption of 8 percent fixed costs (OI), a 20-percent margin, and a 2-percent profit rate at OA.

(\$0.055) > (DA) (\$0.045), in part because AG > DA. The size of the bank's fee is also involved in the direction of the inequality. The larger the fee, the higher the ratio of new to old business required to produce a positive net contribution to store profits. In figure 8, for example, if the bank's fee were 6 percent instead of 4½ percent, the positive contribution would become smaller (AG) (\$0.04) and the negative contribution larger (DA) (\$0.06).²³ Consequently, a larger volume of new sales (AG) relative to old sales (DA) would be required to offset the increase in the bank fee.

In summary, under the previous assumptions, the additional business attracted by an adopting foodstore in the initial stage of the credit card plan could prove to be lucrative in terms of total store profits. If sales on credit are maintained at a high enough average to reduce the bank's fee to the 4½ percent level, and if the store can maintain a high ratio of new/old business on credit card, it is plausible that (1) the charge-account plan will increase the store's net profits, and (by definition) (2) prices will be under no upward pressure from increased costs. But even in the initial stage of adoption, it is not difficult to specify a set of unique conditions that could cause the plan to decrease the store's profits and result in an upward push of costs on store prices.

These conditions would include: (1) High bank fees incurred because of very low average sales on credit; (2) a low willingness rate of consumers holding cards to transfer from one outlet to another in order to use the card for food purchases; (3) location of the credit-card store in a market area with few (or no) competitors; (4) individual store policies (e.g., high prices) that ordinarily make it difficult for the store to attract customers; (5) very low percentage of fixed costs; and (6) an unusually large concentration of credit-card holders and users among that store's existing customers, as contrasted with the concentration prevailing in the market area.

Irrespective of how lethargic foodstore response to the charge-account plan may appear, latent and explosive dimensions in the dynamics of adoption exist. First, it is very likely that the plan will

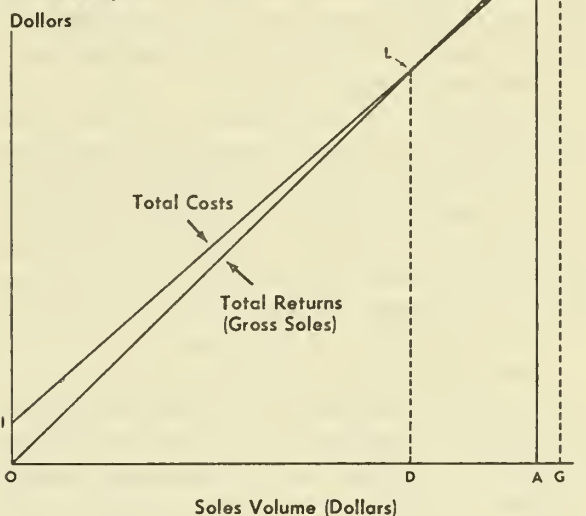
²³ With a 6-percent bank fee, the positive contribution per unit on AG, sales volume, would be \$0.10 ($\Delta TR - \Delta TC$) minus \$0.06 = \$0.04. The negative contribution of DA would increase directly to total: (DA) (\$0.06).

prove profitable to some aggressive initial adopters who will pull customers away from other stores. This will be especially true when the initial entrant is highly competitive with its rivals in all respects, particularly in pricing. The tendency always exists that rivals in the same market area and in contiguous areas may be induced into retaliatory, albeit unwilling, adoption of the plan. Second, because financial institutions are aggressive in promoting the credit plan in an overall sense, the growth of the plan in terms of total dollar use and numbers of credit-card holders and member sales outlets may prove to be an ever-increasing inducement to adoption by foodstores. Third, aggressive competition among financial institutions to acquire the foodstore market for the credit device could bring heavy sales pressure into the picture as a force influencing adoption.

At this point, one can only surmise that, on one hand, the charge-account plan may simmer along and never really catch on, while, on the other, the possibility exists that it will grow and be widely adopted. If the plan just simmers along, it will not, in terms of this analysis, grow beyond the initial stage of adoption. This implies that most foodstore firms will ignore the adoption of the plan by a very small group of stores. This situation would be most likely when the adopting group of stores varies significantly from the nonadopting group in terms of price, product, and service policies. An important precipitant hastening widespread adoption could well be the decision of several respected chainstore managements to take the plunge. This type of move could tend to set off a chain reaction with the likelihood of widespread secondary-stage adoption of the plan in areas where the bank-charge-account plan is, or would become, available.

Secondary stage adoption.—In the secondary stage, with widespread foodstore adoption of the credit card (accompanied by normal growth of the entire credit-card plan), it is likely that the potential profitability of the plan would decline. Stores adopting the plan in the more profitable initial stage would experience a pronounced decline in their newly acquired credit-card customers as such customers returned to their former outlets in response to widespread, competitive adoption of the charge plan. In addition, greater consumer acceptance of the card would increase the store's percentage of old business on credit card. The

PROFITS OF CHARGE-ACCOUNT PLAN FOOD STORE: SECONDARY STAGE IMPACT



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FIGURE 9

key factor in the secondary stage would be a decided reduction from the initial stage in the ratio of new to old credit-card business resulting in an increase in costs. The ensuing squeeze on profits would lead inexorably to price increases to re-establish the former profit level. The inevitable increase in marketing margins would be a continuation of the recent trend of additional retailing services being compounded into the retail price of food.

Figure 9 illustrates the impact on net profits of a secondary-stage situation in which five out of seven stores in a given market area have adopted the charge-account plan. The assumptions underlying the Total Returns line are identical with those in figure 6.²⁴ The segment of old business done on credit card, AD, now equals 24 percent of the original sales volume, OA.²⁵ The additional cost of this segment is 1.08 percent of total

²⁴ The market area contains seven stores, all equal in sales volume; 40 percent of consumers hold credit cards; 60 percent of cardholders are willing to use them for food purchase; 20 percent of the latter group are willing to transfer among outlets to use their cards; and there is a 5-percent sustained upgrading rate in the food use. Note that the conclusion of this section would still be valid on the assumption of a zero upgrading rate.

²⁵ See p. 93 for computations.

sales, OA.²⁶ The new costs are represented by the new Total Costs line ILKM. Thus, considered alone, the old business on credit card cuts net profits from BJ (assumed at 2 percent of sales) to BK, or 0.92 percent of sales. Since the cost increase, JK, is 1.08 percent of sales, the old business on credit cards has cut into total profits at sales volume OA by 54 percent.

The segment of new business done on credit cards, AG, representing a gain of 3.22 percent in sales, consists of a gain of 2.02 percent in new customers attracted plus 1.2 percent upgrading by old customers.²⁷ *Taken alone*, the segment of new business contributes to net profits by an amount equal to the volume of new sales, AG, multiplied by \$0.055²⁸ per dollar of new sales.

On balance, however, the credit-card operation in figure 9 is unprofitable because the negative contribution to profits of the old business done on cards (DA) (\$0.045) far outweighs the positive contribution of the new business on cards (AG) (\$0.055). Significantly, the diminished ratio of new to old business on credit cards (AG/DA) has made the secondary stage unprofitable. At sales OG, total costs, GM, with the credit plan exceed GN, what total costs would have been in the absence of credit cards, by 1.19 percent.²⁹

In this example, prices would need to be increased by 1.15 percent to restore net profits to the 2-percent level in credit-card stores. Presumably, in the short run, the rivals not adopting the cards would also suffer a drop in profits because of declining volume of sales resulting from loss of customers to credit-card outlets. The price increase required would be still higher in situations characterized by (1) smaller average credit-card sales (higher bank charges); (2) a larger percentage of old business done on credit card; (3) a higher store-adoption rate of the plan; and (4) a lower (or zero) degree of upgrading on credit

purchases. The impact on costs because of changed store operating practices as a result of the charge-account plan are not included in the above analysis.

Some Aggregative Implications

The preceding sections indicate that, within the decade of the 1960's, it is at least possible that a significant proportion of retail food purchases may be made on a credit basis. Should this possibility be realized, major issues would center on the impact on retail food prices and the possibility of upgrading induced by credit.

In the event of significant development of credit in the retail food business, the assumed 4.5-percent charge for credit would be approximately the extent of the general price increase only in the limiting case of 100 percent nationwide store adoption and consumer use. If 50 percent of the food business were done on credit in stores doing 100 percent of their business on credit, the price increase *in such stores* would be somewhat less than 4.5 percent (because of the presumed increase in volume of new business) and consequently the national increase would be somewhat less than 2.25 percent. Alternatively, if the same stores did only 20 percent of their business on credit, their price increase would be less than 0.9 percent, and the national increase less than 0.45 percent.

In general, the price increase in all food at retail would be approximately equivalent to the bank charge multiplied by the fraction of the Nation's business done on credit card, subject to a possible offset owing to the positive impact on profits attributable to the segment of new business attracted by the credit service. The higher the proportion of national adoption of the credit plan, the smaller would be the possibility of attracting new business and the lower this offset.³⁰ It would seem that increased retailing margins and the necessity for a segment of the retail food business to raise prices inevitably generate market forces which operate back through marketing channels and exert unique downward pressure on prices paid to processors and farmers.

²⁶ Twenty-four percent of the 4½-percent bank charge = 1.08 percent.

²⁷ See p. 93 for the calculation of the increases in sales volume.

²⁸ Net profit per unit of new credit-card business is calculated as follows: Slope of TR, \$1, minus slope of original total cost line, \$0.90, minus bank fee per dollar of sales, \$0.045.

²⁹ 26.37 percent of total sales, OG, are on credit: $\frac{DA + AG}{OG} = \frac{27.22}{103.22} = 26.37$. 26.37 percent of the 4.5 percent bank fee represents an increase in total costs, at OG, of 1.19 percent.

³⁰ The impact of cost-saving and cost-increasing operating features of the plan cannot be estimated without empirical study.

The question of whether consumers will upgrade their purchases on credit can be answered only by empirical investigation of actual purchasing patterns. Agricultural interests, of course, would be concerned with whether consumers who use credit buy food in greater quantity or of higher quality. Such upgrading would be equivalent to an increase in the demand for food on that portion of the consumer market involved in upgrading. It is possible that consumers buying on credit would not upgrade purchasing at all. But the impact of even an assumed 5-percent level of upgrading is not likely to be of the first order of importance. Even with 50 percent of the Nation's food business on credit, a 5-percent upgrading rate would increase total sales of food by only 2.5 percent.

Upgrading on credit and the degree of price increase resulting from the credit plan are interrelated in their impacts on total food expenditures. During the last several decades, agriculture generally has not had credit available as a marketing tool at the retail food level. By contrast, the use of credit has proliferated in nonagricultural lines competing for a share of the consumer's dollar. It could be argued that any potential advantages inhering in credit as a marketing tool to secure a larger part of consumer expenditures have necessarily been on the side of nonagricultural sectors.

But this argument does not take into account the impact of the credit service on prices. With the development of cash-and-carry mass merchandising, elimination of credit in food retailing enabled food to be sold at a price advantage in this respect, as compared with other retail lines bearing the additional cost of the credit service. In the current situation, the full reintroduction of credit in retail food marketing would reestablish the food business on a "credit parity" with other retail lines, but would wipe out the price advantage of cash-and-carry business now reflected in retail marketing margins. Consumers facing the price increase would adjust by moving back up the aggregate demand curve, downgrading or purchasing less in response to the general increase. Even on the assumption of upgrading, a similar movement would occur on the newly increased demand curve appropriate to the credit-card users, offsetting to a degree their original tendency to upgrade on credit.

Case Study

The foodstore selected for case study was a partner-managed, nonaffiliated, independent, carrying a full line of groceries, meat, delicatessen, and produce. The store is near the center of a large metropolitan area in California. It has an annual sales volume of approximately \$750,000; it is located on a major arterial, not in a shopping center or heavily concentrated shopping district; and within the radius of a mile there are 42 grocery outlets of all sizes, 12 of them within a half-mile radius—approximately 7 blocks. Extension of credit to a limited number of customers was an existing store policy at the time it adopted the bank-charge-account plan.

The store came to the attention of the writer as a result of widespread newspaper, magazine, and trade journal attention directed to its bank-charge-account plan operation. Cooperation by store management and full access to its excellent records were additional factors in influencing its selection for study. There is *no* basis for implying that the findings for this store are representative of the approximately 300 California foodstores which, as of June 1, 1960, were using the bank-charge-account plan.³¹ The store is highly atypical in one respect—its average bank credit sale is extremely high and its cost for the plan is therefore much lower than that of other stores using the plan.

Management reported that the plan was adopted primarily in the hope that it would reduce excessive financial and cost burdens of credit extended on store charge account. The store has operated the plan from June 1959 to date. Data collected cover the 12-month period June 1959–May 1960.

As defined earlier in this article, the store's market area is in the extremely early phase of the initial stage of adoption. As of May 1960, only one other foodstore outlet within a half-mile radius offered the bank charge plan, and in the entire metropolitan area only four other foodstores had it.

Store promotion and advertising of plan.—The store uses no advertising or promotion to let consumers know it offers the bank-charge plan. Management reports that consumers have learned of

³¹ "300 California Food Stores Feature Bank Credit Plan," *Supermarket News*, May 30, 1960, p. 1.

the plan: (1) By reading newspaper or trade journal publicity accounts; (2) by bank referrals in response to inquiries of credit-card holders concerning location of foodstores offering the plan; and (3) by seeing the imprinter or the credit card transaction at the checkout stand. In contrast to its extremely cautious and passive policy of attracting credit-card business, the management actively promotes, through personal sales talk to users of the credit card, the importance of maintaining a high sales volume on each purchase made with the card. This policy, it appears, accounts for the extremely high average credit-card sale.

Volume and size of bank-charge-account sales.—Credit-card sales averaged \$959 monthly during June 1959–May 1960, but amounted to only 1.5 percent of total store volume. By comparison, a bank report indicates that the average monthly volume for 200 southern California foodstores in the first quarter of 1960 was \$975.³² In the period June–December 1959, the store showed some growth in credit-card sales, with an average of \$1,135 monthly. However, January–May 1960 saw a steady decline in credit card sales from a monthly average of \$923 in January–February to \$572 in March through May. Management attributed the decline to the more conservative bank policy, following bad debt losses, in reissuing credit cards to consumers. The decline in credit card volume cannot be attributed to a decline in overall store volume, since sales increased by 8.5 percent in March–May 1960, over January–February 1960.

Over the 10-month period June 1959–March 1960, the store's average sale on credit card was \$24.89. In contrast, the average store sale was only \$4.18 over the same period. Size of average sale on credit card was extremely stable:

Quarter:	Average sale on credit card
July–September 1959.....	\$25. 58
October–December 1959.....	24. 72
January–March 1960.....	24. 95

By way of comparison, the bank has reported³³ an average sale on credit card of \$13 in January–March 1960 for 200 member foodstores in the southern portion of California.

³² *Ibid.*, pp. 1 and 30. The report states that in the first quarter of 1960, these stores averaged 75 transactions per month, with average sale of \$13.

³³ *Ibid.*, p. 30.

Over the 10-month period June 1959–March 1960, the store averaged 42 credit-card sales per month. By comparison, the 200 southern California foodstores previously referred to averaged 75 such sales per month in the quarter January–March 1960.

Bank fee paid by store for charge-account service.—Data from bank statements show the following fees³⁴ expressed as a percentage of sales volume done on bank credit card:

Period:	Bank fee (as a percent of charge-account sales)
Month, June 1959.....	3. 5
Quarter, July–September 1959.....	3. 0
Quarter, October–December 1959.....	3. 5
Quarter, January–March 1960.....	3. 5

By comparison, for the \$13 average credit-card sale reported for the 200 southern California foodstores, the bank fee would be 4.25 percent.³⁵

Significant store-operating practices associated with the bank-charge-account plan.—Trading stamps were not issued with credit-card purchases. This policy constituted an offset of about 1 percent to the bank charge. A similar policy has been followed on store-charge-account sales.

Management reported that very few customers buying on store-charge-account switched to the bank-charge-account plan. In two pairs of successive months—one pair including the months immediately before and after the plan's inception—store- and bank-charge-account records show only one customer changing from store to bank charge account. Thus, the plan did not reduce materially the financial burden of the store's private credit system.

Management reported that the checkout process was unduly delayed, with embarrassment to some customers, by the necessity to call the local bank office and clear credit sales over \$25 for customers whose credit card did not automatically authorize purchases over \$25. In the period June–August 1959, such calls to the bank were required in 38 out of 126 credit-card transactions.

Customers buying on credit card did not distribute their purchases evenly over the week, nor did their pattern differ materially from the store's regular business. Credit-card customers spent

³⁴ The fee is exclusive of a \$6 quarterly rental fee for imprinters.

³⁵ See table 1, for schedule of bank fees, p. 94.

TABLE 2.—*Straight-line distance from store location to bank- and store-charge-account customers' residences, July 1959 and April-May, 1960*

Distance from store	July 1959				April-May 1960			
	Store-charge-account customers		Bank-charge-account customers		Store-charge-account customers		Bank-charge-account customers	
<i>Miles</i>	<i>Number</i>	<i>Percent</i>	<i>Number</i>	<i>Percent</i>	<i>Number</i>	<i>Percent</i>	<i>Number</i>	<i>Percent</i>
0-0.49-----	11	31.4	1	3.2	12	25.0	6	28.6
0.50-0.99-----	13	37.2	2	6.4	15	31.1	4	19.0
1.00-1.99-----	8	22.8	7	22.6	12	25.0	3	14.3
2.00-2.99-----	2	5.7	2	6.4	3	6.3	1	4.8
3.00-3.99-----	0	0	7	22.6	0	0	2	9.5
4.00-4.99-----	0	0	3	9.7	1	2.1	1	4.8
5.00-7.49-----	0	0	2	6.4	1	2.1	2	9.5
7.50-9.99-----	0	0	4	12.9	1	2.1	0	0
10.00 and over-----	1	2.9	3	9.7	3	6.3	2	9.5
Total-----	35	100.0	31	100.0	48	100.0	21	100.0

32.6 percent of their weekly total on the first 3 days (Monday, Tuesday, and Wednesday) of the store's 6-day week, compared with 30.9 percent for all store customers combined.³⁶

Location of bank-charge-account customers—comparison with store-charge-account customers.—In July 1959, the second month of the plan's operation, the residences of bank-charge-account customers patronizing the store were highly dispersed over the entire metropolitan area (table 2). Only 9.6 percent lived within a mile of the store, while 61 percent lived more than 3 miles from it and 22 percent lived at a distance of more than 7½ miles.

This was in sharp contrast to the locational pattern of the *store-charge-account* customers, highlighted by a marked clustering of customer residences in the immediate neighborhood of the store, with the cluster oriented about the major arterial on which the store was located. Nearly all of the 69 percent of *store-charge-account* customers living within a mile of the store were included in the cluster. The remainder of *store-charge* customers were dispersed, but only 3 percent of all *store-charge* customers lived more than 3 miles from the store.

In April-May 1960, with the plan in operation 10 months, and at much-curtailed sales volume, the *store-charge-account* customers showed much

the same locational pattern, but dispersed at somewhat greater distances from the store.

The locational pattern of bank-charge-account customers showed a shift: Clustering in the neighborhood of the store occurred, with 47½ percent of all April-May bank-charge-account customers living within a mile of the store. However, 33 percent of all bank-charge-account customers still lived more than 3 miles from the store (as contrasted, in April-May, to 12.6 percent of all *store-charge-account* customers). Two inferences may be drawn from the substantial distances which a high percentage of bank-charge-account customers traveled to patronize the store:³⁷

1. Since many of the credit-card customers were drawn from contiguous or distant market areas, such customers were *strongly* motivated to patronize the store because of the credit plan.

2. Since a large percentage of credit-card customers came from a different "universe" of customers (with respect to distance) than usually patronize the store, they comprised a substantial new business component. This is substantiated by management's report that most of the credit business is new business.

Dollar volume of monthly purchases per bank-charge-account customer did not decline with increased residence distance from the store. Ac-

³⁶ Based on data covering 33 weeks free from the influence of holidays over the June 1959-May 1960 period.

³⁷ Irrespective of the route followed, in every case of substantial distance a large number of competitive stores had to be passed on the way to the bank-charge-account store.

TABLE 3.—*Monthly purchases per bank-charge-account customer by straight-line distance of customer residence from store location, July 1959, and April–May 1960*

Distance from store	Monthly purchases per bank-charge-account customer			
	July 1959		April–May 1960	
	Dollars	Percent of average for all customers	Dollars	Percent of average for all customers
Miles:				
0–0.49-----	32. 15	68	34. 04	91
0.50–0.99-----	26. 75	57	44. 83	119
1.00–1.99-----	38. 58	82	35. 04	93
2.00–2.99-----	32. 41	69	33. 22	88
3.00–3.99-----	68. 45	145	22. 01	59
4.00–4.99-----	43. 22	92	49. 83	133
5.00–7.49-----	79. 84	169	50. 45	134
7.50–9.99-----	37. 27	79		
10.00 and over--	41. 46	88	36. 27	96
Unweighted averages:				
All customers----	47. 17	100	37. 58	100
Customers under 3 miles-----	35. 04	74	37. 28	99
Customers 3 miles and over--	54. 84	116	38. 19	102

tually, credit-card customers who lived more than 3 miles from the store bought more heavily during both July 1959, and April–May 1960, than did credit-card customers living at closer distances (table 3).

Comparison of sales on store and bank-charge account; repeat business from credit-card customers.—In July 1959, store-charge-account customers bought more heavily, averaging \$75.29 per month, as contrasted with \$47.17 for credit card customers. However, the size of average sale on credit card, \$26.11, was greater than the \$9.21 averaged by store-charge-account customers.

Among the 73 new customers who appeared to buy on credit during June–October 1959, 30 did not repeat in any later month in the period July–November, 1959. Taken as a group, the new customers repeated sales in 30 percent of all subsequent months.

Profit estimate on store's credit-card operation.—Major profit rate determinants are: (1) Size of bank fee; and (2) ratio of new to old business on credit card. The store's bank fee will be taken to be 3.5 percent which, less the 1-percent offset for nonissuance of trading stamps, may be assumed as 2.5 percent of credit-card business. The ratio of new to old business on credit card will be estimated, conservatively, to be 4:1. The slope of the store's total cost line will be assumed at 0.9 (identical with the assumption for fig. 7) and consequently the net profit increment per dollar of sales volume beyond the store's breakeven point is 10 cents. Monthly credit-card business is taken as \$1,000, of which \$800 is new business. The profit estimate consists of three steps:

1. *Profit offset for segment of old business (\$200) now done on credit card:* The 2.5-percent charge loaded on to the old business amounts to a profit offset of \$5 monthly.

2. *Gross profit on segment of new business (\$800) now done on credit card:* Profit rate per dollar of new business is 7.5 cents (10 cents minus 2.5 cents). Gross profit on new business is \$60.

3. *Net additional store profit rate on credit-card operation:* \$60–\$5=\$55 net additional store profit on the credit-card operation. Net profit rate on the \$800 new credit-card business, is 6.9 percent. By comparison, under our assumptions, the net profit rate on new business not requiring any promotional costs would be 10 percent.

Book Reviews

Marketing Policies for Agriculture. By James R. Bowring, Herman M. Southworth, and Frederick V. Waugh. Prentice-Hall, Inc. 276 pages. 1960. \$7.95.

ONE OF THE MOST significant statements of the authors is that the problems of agricultural marketing are becoming increasingly important and difficult basically because of changes associated with the continued specialization of agriculture and the transformation of the United States into an urban-industrial economy. The book emphasizes the various facets of decision-making on the part of the farmer, marketing agencies, the consumer, and organized groups, including the Government itself, in achieving the broad aim of economic life, which is to obtain the highest possible real income.

The hope is expressed that the book will help the reader to think constructively by selecting typical problems and delineating issues in such a way as to assist the individual in making the decision which seems best for him in whatever situation he may find himself. As for facts about the marketing system, only such information is presented as is necessary to posing the problem, defining the issues, and suggesting alternative kinds of decisions and the consequences that may be expected to flow from them.

There are four major parts—"Decisions in the Market," "Costs and Allocations," "Marketing Policies of Organized Groups," "Marketing Policies of Government."

"Decisions in the Market" examines the basic functions of marketing, the kinds of decisions which must be made by farmers and marketing firms, and considers the price system and the concepts of the perfect market and comparative advantage.

"Costs and Allocations" deals with some of the principal problem areas with which marketing agencies are concerned, including the necessity of keeping competitive in terms of operating costs, market development, and market allocation. Reference is made to concepts such as elasticity, marginal costs and returns, perfect and imperfect competition, price discrimination, and so on, which must be taken into account if the decisionmaker is to adopt a deliberate and rational approach to maximizing economic returns.

"Marketing Policies of Organized Groups" analyzes the ability of groups, in contrast with individuals, to exercise economic power, and includes integration in this context. The nature and purpose of farmers' organizations and trade associations are described.

"Marketing Policies of Government" treats a wide array of activities ranging from weights and measures up to positive Government interventions which are designed to improve the operation of agriculture and its income position in the overall economy.

The authors turned out an excellent job of achieving their objectives in writing the book. The explanation of concepts is lucid and brief. Some sections are outstandingly well done—for instance, the chapter on "Market Development." There is little with which most economists would disagree, and though the illustrations used by the authors are drawn primarily from agriculture, the principles elucidated apply in large measure to marketing in general. What few criticisms might be made stem mainly from the compression of such a tremendous subject into one short book. For instance, in the chapter on "Group Action and Economic Power," the authors refer to integration in the canning and broiler industries as providing increased economic power for both the producer and processor. This is undeniably true in some important respects, but there is no explicit recognition of the implications of shifts in the location of decisionmaking on the freedom and initiative of individual growers, and other impacts on both economic and noneconomic values.

Though the book probably will have wide use, lacking extensive descriptive data on the marketing system it is not by itself adequate as a text. At the same time, the exposition of principles in many cases is too brief for one who is completely uninitiated in economics. But the volume should prove valuable as a supplement to textbooks commonly used in teaching beginning courses, and also should be exceedingly helpful to a wide range of laymen interested in obtaining a better under-

standing of the marketing system, including an appreciation of the problems of those with whom they appear to have conflicting interests. Even professional economists should find the delineation

of areas of decisionmaking and the outlining of applicable theory useful in refreshing their perspectives and sharpening their analyses.

Bennett S. White, Jr.

Theory of Markets. By Tun Thin. Harvard University Press, Cambridge, Mass. 120 pages. 1960. \$5.

AT LEAST SINCE COURNOT, the core of economic theorizing concerning the problem of oligopoly has been based on conjectures of economists about "conjectural dependence"—that is, the oligopolist's conjecture about what other sellers will do. In this little book Professor Thin presents a mathematical review of some of the more notable hypotheses (Cournot, Smithies, Chamberlin, Stackelberg, and Fellner), and offers as his own contribution a generalized version of Chamberlin's "mutual dependence recognized" solution. Professor Thin bases his theory on an analysis "akin" to game theory: Instead of conjectural variations that do not vary with changes in market conditions, his theory requires a set of rules that outline the behavior of the oligopolist for all conceivable market situations.

Apparently Professor Thin did not intend to study the theory of markets, as the title of the book suggests—it contains only a sketchy mathematical analysis of monopoly (two pages) and

perfect competition (eight pages). As the author himself notes, it has little or nothing to say on nonprice competition—a type of competition that has characterized many American postwar markets—or on the question of freedom of entry and exit. Nevertheless, his essay on the question of conjectural dependence is useful and stimulating. Among other things, it offers a framework for reconsidering divergent recommendations on anti-trust policy derived from "point" solutions. (The author employs the framework to reconcile the differing conclusions of Fellner and Chamberlin, for example.)

The book will probably be most useful to theoreticians, especially those who have some mathematical training. But it will not afford much help to marketing economists who have found little in oligopoly theory to provide a framework for analyzing the structure of agricultural markets, or for predicting market behavior.

William H. Waldorf

Marketing Poultry Products. By Earl W. Benjamin, James M. Gwin, Fred Faber, and William D. Termohlen. John Wiley and Sons, New York. 327 pages. 1960. \$7.75.

FOR SECTORS in which they apply, texts like *Marketing Poultry Products* are sourcebooks of material concerning the realities of economic enterprise. Specialists in egg and poultry marketing will find that the contents of this book are not new. But the text does provide a handy compendium of current facts, a convenient focus for review and stocktaking, and, probably most important, a basis for judging progress and advances in the state of the arts.

Progress and advance in the industry are revealed by comparisons among successive editions—the book has a venerable history of 37 years during which it has run into five editions.

In the first and second editions, the water-glass method of preserving eggs was prominent; in later ones it vanished. Recent editions devote less and less attention to the live marketing of poultry—the latest (1960) properly prefaces its discussion of this subject with a statement of its declining importance. It also introduces the continuous-type poultry chiller, though only in passing. The 1937 volume introduced the fiber egg case. The 1960 volume mentions the innovation of contract egg production. So it goes in the evolution of egg and poultry marketing; the most systematic record of these changes is given in this inclusive text.

Similar deletions and additions help to date the gradual—or sometimes cataclysmic—changes that have marked egg and poultry marketing. The practicing specialist picks up these changes even faster than they can be incorporated into successive issues of a carefully prepared book, but a decade or two hence the recording of these innovations will be viewed as a distinct service to specialized economists, economic historians, and marketers with an intellectual curiosity about the evolution of their business.

But one should not conclude that the book is perfect. One aspect that could have been improved is editing. To find the following two sentences less than a page apart, to cite one example is certainly irritating to the alert reader:

“The individual commercial firms’ main interests are, and rightly should be, in promoting their company brand for the purpose of getting a profitable share of the existing current volume of business.”

“The primary business interests of any firm engaged in producing or marketing a product or service related to the egg and poultry industry should

be to promote its own brand or firm name, in order that it may obtain its proper share of the currently available business.”

Another suggestion concerns organization of subject matter. In some parts of the present edition, subject matter is along functional lines—demand, transporting and storing, merchandising and retailing—instead of separate chapters for eggs, chickens, turkeys, and so on. The increasing specialization of egg and poultry production and marketing has led to a distinct separation between handlers of the respective commodities—they now have relatively little in common so far as market agents and physical handling are concerned.

And finally, this reviewer would have glossed over, to a greater extent than the authors did, the social objectives of poultry marketing. “The job of distributors in the country or city is to help bridge the gap between producers and consumers,” yes; but one should face the fact that the primary objective of operators in this field is to make a profit.

Edward Karpoff

Margins for the Distribution and Processing of Foods. An Evaluation of American Investigations. [Die Handels- und Verarbeitungsspannen bei Nahrungsmitteln. Eine Auswertung amerikanischer Untersuchungen.] By Gunther Schmitt. Berichte über Landwirtschaft. Neue Folge. 171 Sonderheft. 1959. Verlag Paul Parey, Hamburg and Berlin. 1959. 15.50 deutsche marks (about \$3.70). For subscribers to Berichte über Landwirtschaft, 12.40 deutsche marks (about \$3).

DR. SCHMITT IS CONCERNED with contemporary food marketing problems in Germany, but he uses American research as a basis for his book because the United States has a wealth of pertinent research results (much of it in fulfillment of the Research and Marketing Act of 1946), and because food processing and distribution in the United States are distinctive for efficiency and ability to serve growing consumer wants for complementary goods and services.

The theoretical framework of the book draws heavily upon European sources. The bibliographical citations of this material should be useful to American readers who are curious whether, indeed, all the writing on marketing economics that is worth reading is in English. The empirical content, of course, comes from American sources: Journal articles, State experiment station publications, Government publications, and marketing textbooks. Nearly 600 titles are cited.

The monograph takes up, first, the role of agricultural marketing within a developing economy, with particular attention to developments in the United States from 1913 to 1956: Food marketing costs, the growth of complementary goods and services, employment in food trades and processing, and the effects of changes in market structure and the shifting of marketing functions.

Successive sections of the work concern: (1) The falling farmers’ share of the consumers’ dollar; (2) trading and processing margins for foods; (3) the forms of the relationships between food margins and food prices; and (4) response of margins to cyclical and seasonal fluctuations in prices.

A brief concluding section considers the possibility of, and mechanisms for, reducing distribution and processing margins. Direct measures for governmental control of margins, it is said, are too often inaccurate because of dynamic changes that

come about with economic development; deficiencies of control in one sector leading to need for control in adjoining sectors. State intervention is best applied to provide conditions for effective competition and to find and disseminate knowledge of improved methods of marketing.

Readers familiar with the American literature on marketing margins will find much of this monograph fairly easy reading, even though their knowledge of German may be limited. Most of

the less common German words appear with definitions or with context that helps with their meaning, and the illustrations and tabular material so freely used are familiar to American readers.

Dr. Schmitt has contributed a useful and stimulating synthesis of American research on marketing margins. It may be the more interesting because it offers a way of seeing ourselves as others see us.

Louis F. Herrmann

Consumer Expectations, Plans, and Purchases: A Progress Report. By F. Thomas Juster. National Bureau of Economic Research, Inc., New York. 174 pages. 1959. \$2.50.

IN THE EMPIRICAL TRADITION of the National Bureau, practically all of the pages in this monograph are purposeful and meaningful.

The monograph is a progress report of the Bureau's study of a fundamental area of economics: Consumer behavior and its rational determinants. More specifically, it reports on analyses of survey results reflecting interrelationships between reported buying plans of households and expectations about personal financial prospects and general business conditions, household status with respect to past purchases, debts, assets held, and so on. An evaluation of buying plans as a forecasting tool and some conclusions on methodology are given.

The approach is that of the Reality School. Underlying the whole study is the assumption of rationality in household decision making—rational decisions account for much of the important variations in households' purchase rates of durable goods. The Mood School holds otherwise. To them, data reflecting dreams, hopes, and fears are more closely associated with the important variations in household purchase rates since they reflect changes in impulse buying.

Juster presents a strong case for the Reality School, though the final verdict has by no means been reached.

The data presented and analyzed were obtained from a special group of households belonging to the Consumers' Union of the United States (CU).

The monograph is replete with hypotheses, analyses, and statistical tables, and makes rather slow reading. Especially to be commended is the ingenuity reflected in the various statistical and

analytical techniques used to test the various hypothesis posed and to analyze the data. However, one might wish that Juster and his colleagues had included a methodological appendix describing in greater detail their analytical methods and techniques.

With respect to the general findings of the study, there are so many, that only a few of the more significant can be listed. First, Juster finds that the year-to-year changes in the CU sample's level of aggregate buying plans for both automobiles and major appliances have foreshadowed changes in purchases over the period 1949 to 1957. This, of course, suggests that buying plans data are useful as forecasting tools.

Equally significant is the variation in reported buying plans associated with variations in the time horizon covered by the question asked in the survey. The number of reported buying plans to a question reflecting a vague time horizon such as "What do you plan to buy 'later'?" (than six months from now) were found to be more than 4 times greater than number of plans for a 6-month horizon. Moreover, 6-month buying plans are more closely related than 12-month plans to general economic expectations and to individual financial situations in households.

Also, confirming what other studies have found, family income and age of household head are among the variables of greatest importance of those associated with buying plans and purchases. With respect to differences among households with the same income and age of household head it was found that: (1) Recent income changes of about 20 percent or less had little effect on durable goods

purchases or plans; (2) the level of asset holdings were only slightly associated with plans and purchases; but changes in asset holdings were strongly associated with plans and purchases, and (3) the amount and maturity of nonmortgage debt strongly influenced buying plans.

Findings with respect to expectational variables include: A strong relationship between buying plans and purchases and household expectations about future financial prospects over a 5-year future period; a strong relationship between buying plans and expectations about business conditions one year ahead; and relatively little association between either plans or purchases and price expectations.

On the methodological side, it was concluded

that the nature of household responses to any given multiple response question is heavily influenced by the number of alternative responses listed. Also, the procedure of sample splitting—that is, sending different questionnaires to equivalent subsamples at the same time—is held to be an effective device for revealing the relative usefulness of competing questions.

These few indications of Juster's findings do not do justice to the thoroughness and exhaustiveness of the area covered. For those who have even the slightest interest in the subject, a study of the full contents of this paper will prove rewarding. A more comprehensive empirical treatment will probably not be found anywhere in the literature.

Robert H. Masucci

A Public Development Program For Thailand.
Bank for Reconstruction and Development.
1959. \$6.00.

Report of a Mission Organized by the International
The Johns Hopkins Press, Baltimore. 301 pages.

THE INTERNATIONAL BANK for Reconstruction and Development (World Bank) has sent missions to several underdeveloped countries to assess and evaluate the possibilities and the resources needed for future economic development. Thailand is one of these countries.

The mission points out the nature of Thailand's economy, which has some 80 percent of its population employed in agriculture, and finds most of its gross national product comes from that source, manufacturing industry being relatively small. Important manufacturing industries are those processing agricultural products, such as saw mills and rice and sugar mills. Most other manufacturing industries are small in establishment size and in their contribution to the gross national product.

Thailand during recent years has had an increasing real gross national product per capita, but in the future could be faced with a shrinkage in rate of growth, or even a decline. The purpose of the mission is to assess how this growth can be continued, what steps Thailand herself needs to take, and what aid from the outside is needed.

Agricultural production can be increased substantially by improvements in cultural practices, in irrigation facilities, and in cropping patterns. The Northeast is more arid than the monsoon climate of the Central Plain and much could be done to improve production by shifting from rice to upland crops. Yield per acre of paddy or rough rice

is very low; improved cultural practices could increase the yield substantially. In the South, rubber output could be increased sharply by planting the plantations with improved varieties of trees. Irrigation could be used to make the flow of water more even throughout the year. This would permit the development of double cropping in some areas and more reliable farming in the more arid regions. Marketing can be improved principally by improving the transportation facilities of the country, including rail, road, and air.

The report covers growth of small industries, as the mission feels such growth to be desirable. It also assesses the need and possibilities for developing improved housing, education, and health facilities. Sharp improvements in all of these social services are badly needed.

Improvement in education is needed at all levels from elementary schools through the university. As in many underdeveloped countries, lack of trained manpower hinders progress. Trained manpower is needed for the improvement of the educational system, for agricultural extension, for medical service, for construction work, and for almost any other field of endeavor that could be listed. Although some training of Thais in universities abroad is necessary, the mission places primary emphasis on improvement of the educational system within the country. Manpower for initiating improvement in the educational system

could be acquired by the judicious use of foreign experts in Thailand and by more efficient use of foreign trained Thai scholars.

This carefully constructed report contains a general plan for helping a underdeveloped country develop its economy. As such, the document is not only useful to the country which is the subject of the report, but it is also useful for students who are studying the general needs of underdeveloped countries, in particular, the smaller ones. Lack of trained manpower, large dependence upon

agriculture and associated industries, and need for improved housing, health, and education facilities—these in general are typical of such countries. The section that deals with methods of financing the development with adequate budget and administrative controls within the government points to governmental problems often found in countries that aspire to modernization of their economy from a base that in the Western World would have existed well in the past.

Frank Lowenstein

The Comparative Study of Economic Growth and Structure. National Bureau of Economic Research, 261 Madison Avenue, New York. 201 pages. 1959. \$3.

IN THE LAST 10 YEARS an increasingly larger share of research resources in economics has been devoted to the rate, character, and causes of economic growth. Yet, though we see no dearth of theories of growth, there still is none that is generally accepted. In fact, Raymond Goldsmith, who wrote part I of this report, comments that "the proliferation of theories of economic growth of vastly differing form and content has made it impossible for empirical research workers to discern areas of agreement among theorists; or even to be sure which approach theorists had selected as most fruitful from their point of view."

Notwithstanding the lack of a theoretical framework, Goldsmith sees the basic objective of a systematic comparative study of economic growth and structure. This he defines as understanding "the process of economic growth and of changes in economic structure by means of comparing different countries and different periods, a comparison that permits separation of the specific characteristics of individual geographic and historical situations from the common traits of economic development."

In part I of the volume Goldsmith reviews past and current empirical work on comparative eco-

nomic growth and structure, and catalogs and discusses the problems involved in comparative studies. Supplementary memoranda are presented in part II by Aubrey, Cairncross, Colm, Geiger, Goldsmith, Hagen, Hirschman, Hoselitz, Kuznets, Reynolds, Spengler, and Tinbergen.

Professor Hoselitz's paper, "Historical Comparisons in the Study of Economic Growth," holds particular interest to agricultural economists. In reviewing the sequence of economic growth, Hoselitz discusses the question, not yet fully explored, of whether a substantial increase in agricultural production is a prerequisite of industrialization.

An interesting aspect of Kuznets' paper, "On Comparative Study of Economic Structure and Growth of Nations," is a proposal for a center for comparative quantitative study of economic growth and structure. Among proposed fields of activity for the Center are the systematic collection of data on economic growth and structure, and the comparative analysis of the collected data.

These brief comments indicate the general nature of this book—it is a problem raiser, not a problem solver.

Martin J. Gerra

The Cooperative Movement in India. Fourth edition. By E. M. Hough (revised by K. Madhava Das). John Brown, Oxford University Press, Bombay 1. 493 pages. 1959. Rs20 (about \$4.20).

AS A BACKGROUND for providing information to better understand cooperative development and problems in India, this book is a

veritable encyclopedia of important facts and a storehouse of historical events. It starts with a comprehensive analysis of the various economic,

social, industrial, and geographic factors that serve as a background in providing a better understanding of India and the way in which the cooperative institution may fit into the economic and social structure of the nation. The background information is followed by a detailed description of the development and present status of agricultural and nonagricultural cooperatives (societies) in the country. Cooperatives are considered from the standpoint of such functional classification as credit, marketing, farm supply, farming, consumer organizations, and many types of multipurpose societies.

Cooperatives have been accorded a key position by the Indian Government in each of its three 5-year plans. This emphasizes the contributions that these associations make to the economic and social development of the country. One of the strongpoints of the book is that it does not stop with merely reporting trends in numbers, membership, and volume of business. Critical analyses give attention to such important considerations as the relationship of cooperatives to

various social and political forces influencing economic development, handicaps, weaknesses, and the conditions for success of cooperatives.

The author suggests the possibility of relatively slow improvement in the success of cooperatives. Such difficult areas as the deep-rooted dominance of the moneylender, the widespread illiteracy of the Indian villager, and lack of business experience present many problems that may limit success in achieving substantial end results. The problems serve as focal points for developing much of the subject matter considered in the book.

One comes to the conclusion that cooperatives offer the possibility of becoming an increasingly significant force in the economic and social life of the country. In this respect these organizations are in a strategic position to make important contributions to a free and expanding India. The reviewer feels that, although there are many complex problems to be overcome, India has both the will and the leadership to deal with them, and achieve more effective results in serving its people through cooperatives.

Martin A. Abrahamsen

Probability and Statistics for Business Decisions: An Introduction to Managerial Economics Under Uncertainty. By Robert Schlaifer. McGraw-Hill Book Co., Inc., New York. 732 pages. 1959. \$11.50

FORMAL STATISTICAL THEORY rests on an assumption of unbiased samples, and classical economics on an assumption of certainty. Yet actual samples usually contain an unknown bias and all decisions in the real world face uncertainty.

Professor Schlaifer cuts through these restrictive assumptions with what purports to be the first full-scale attempt to tie together statistical techniques and the economics of business decisions. He provides a nonmathematical introduction to decisionmaking under uncertainty on the foundations of modern utility theory and "personal" probability.

His book is the product of five successive recastings prepared in as many years for classroom use with advanced business management students in the Harvard Graduate School of Business Administration.

The text has an introduction and five major parts. The three chapters of the introduction present the basic concepts of decision theory—

probability, expectation, and utility. Part 1 then applies these concepts to a variety of practical situations under conditions in which intuition and experience light the way. Examples include problems of inventory, scrap allowance, investment, and marketing.

Part 2 introduces more powerful statistical tools for the computation of probability. Here the student learns how to make use of Bernoulli and Poisson processes and the Normal distribution.

Bernoulli processes are those in which there is a constant probability of success on each trial regardless of the outcome of the preceding trials in the same run. The probability of a deuce is 1 in 6 on each throw of a die, for example. In a Poisson process the probability of success is also constant but instead of consisting of separate trials the run is continuous and the probability must be expressed in terms of successes per unit of space or time. For example, take the case of calls on a telephone switchboard during a peak period within which no particular pattern of calls has

been noted previously. The probability of more than six requests for an outside line during a single minute may be estimated from such a process if background data are available.

The special problem of evaluation of information from a sample is discussed in part 3. Only after sampling is well explained is the problem of deciding when to sample and when to stop sampling taken up in part 4. This is a kind of internal decision-making problem—deciding how to go about making decisions.

Part 5 serves to reconcile the classical statistical approach with the methods presented in the first four parts. Some worthwhile discussion of tests of hypotheses and statistical decision rules is given. The appendix contains a useful collection of tables and charts for the principal statistical distributions used in the book. Each chapter is well supplied with pertinent illustrations and problems.

The text bears some of the marks of the classroom use for which it was expressly designed. Some may regard it as overlong and may disagree with the author's dictum that: "Learning depends on repetition; and if the rate of learning can be increased by printing up a few more sheets of white paper, the gain is well worth the cost."

But there is merit in the logical nonmathematical buildup from careful foundation principles and practical illustrations. The businessman interested in a procedure that starts with the intuition and experience that suffices for simple decision problems will find these more formal techniques helpful in tackling more difficult areas.

Probability: An Introduction. By Samuel Goldberg. Prentice-Hall, Inc., Englewood Cliffs, New Jersey. 350 pages. 1960. \$7.95.

THE AUTHOR'S APPROACH to probability is unique: He looks at the forest rather than at the trees. He presents a nonmathematical but logically sound treatment of probability in an easy-to-read systematic way. He develops not only the concepts that are the structure of probability theory but he also introduces much of modern statistics that rests on this foundation.

Because the calculus is not used, the author limits his treatment to finite space, except that he does sample with replacement and develops for this special case the law of large numbers. At this level, the restriction to finite sets is not objectionable.

Professional economists and researchers in managerial economics can also learn from an approach the purpose of which "is not to teach theory for its own sake but to show how theory can be applied to practical advantage in the real world." Even a bank customer trying to decide between waiting lines before tellers' windows might uncover some useful probability tips to aid in his decision.

This does not mean that the techniques described are needed to protect the average bank depositor, the working girl, or the small farmer. Heaven and the school of experience may suffice for most of their decisions. But the managers who develop and administer large farms, banks, supermarkets, and processing plants need more than intuition and experience to guide their actions.

But this is first of all a textbook, designed for classroom instruction. It will serve well either as a primary or supplementary text for courses in business statistics, managerial economics, and mathematical decision-making.

The volume is relatively free from the technical language that keeps so many otherwise well-qualified students and businessmen from participating in exciting new fields. Many will agree that presenting the logical argument in ordinary language rather than in formal statistical terminology is likely to develop a more lively appreciation of the applied features of a decision problem.

Ronald L. Mighell

Mathematical symbolism is minimized and the reader is able to concentrate on concepts and their interrelationships rather than upon rigorous mathematical proofs. This may be beneficial to the seasoned statistician as well as the neophyte, and to the mathematician as well as those whose knowledge of mathematics is limited. It allows the beginner to orient himself and gives a bird's-eye view of the topic to those who have worked through the mathematical proofs in the traditional manner.

The first of the five chapters in the book is devoted to the mathematics of sets. The elementary algebra of sets is developed and Cartesian

product sets introduced. In chapter 2 the assignment of probabilities to the simple events of the sample space which defines the outcome of an experiment is introduced, limited, of course, to finite sample spaces. Combinatorial techniques are first treated in chapter 3 in order that the non-mathematical student shall not be confronted simultaneously with the concept of probability and the more sophisticated enumeration techniques of permutations and combinations.

The random variable is defined in chapter 4, and probability distributions, means, standard deviations, joint probability functions, variance, covariance, and correlation are discussed. Formulas for the mean and its variance are derived for samples drawn with and without replacement and the distribution of sample means is discussed.

In the final chapter, the basic properties of a Bernoulli process and a binomially distributed

stochastic variable are derived. Applications of the binomial distribution to the testing of hypotheses as well as to the more complex problem of decisionmaking under uncertainty illustrate the use of probability methods in modern statistics.

Most students of probability theory would profit by reading this work before tackling the more formidable mathematical treatment of probability. Many practicing statisticians who feel the need of brushing up on the concepts of probability could hardly find a more pleasant, less painful way of doing it. For those trained in classical probability theory following Laplace or in the relative frequency approach pioneered by von Mises, the reading of this book is a palatable introduction to the modern theory of probability associated with Neyman.

Bruce W. Kelly

The Population of South-East Asia, 1950-1980. Future Population Estimates by Sex and Age.

Report III. United Nations Department of Economic and Social Affairs. Columbia University Press, New York. 166 pages. 1959. \$1.75.

THIRD IN A SERIES of reports dealing with future population estimates by age and sex, this study gives results of computations for all

countries and territories of Southeast Asia, defined as that region of Asia that lies to the east of India and to the south of China.

Production Yearbook, 1959. Volume 13. Food and Agriculture Organization of the United Nations. Columbia University Press, New York. 484 pages. 1960. \$5.

THE YEARBOOK contains annual data on "all important aspects of food and agriculture"—population, index numbers of agricultural production, food supplies, prices, wages, and freight rates. Official figures are supplied by

member governments through questionnaires sent out by FAO. Figures not supplied by governments are taken from "reliable unofficial sources" and identified with an asterisk.

WITH THIS ISSUE, *Rex F. Daly* takes over as editor, succeeding *James P. Cavin*, who completed a 5-year term in that office last July. Mr. Daly was recently appointed Chief of the Farm Income Branch, AMS. He had formerly served as Head of the Income and Demand Section of that Branch, and, most recently, had been on leave of absence from the Department, serving in Pakistan with the International Cooperation Administration. Mr. Cavin is Acting Director of the Agricultural Economics Division during the current fiscal year while the Director, *Frederick V. Waugh*, is on leave of absence for the purpose of making a study of the management of agricultural surpluses under a Senior Research Award in Governmental Affairs by the Social Science Research Council. Also with this issue *M. L. Upchurch* replaces *K. L. Bachman* as assistant editor. Mr. Upchurch is the new Assistant Director of Farm Economics Research Division, Agricultural Research Service. Mr. Bachman was recently transferred to Agricultural Marketing Service as Assistant to the Deputy Administrator for Economics and Statistics.

Selected Research Publications in Agricultural Economics Issued by the United States Department of Agriculture and Cooperatively by the State Colleges¹

ANDERSON, K. E., AND HOOFNAGLE, W. S. MILK CONSUMPTION BY CHILDREN AT SCHOOL AND AT HOME IN RELATION TO SPECIAL MILK PROGRAM. U.S. Dept. Agr. Mktg. Res. Rpt. 408, 19 pp. June 1960.

Children in grades 5 through 9, in schools participating in the Special Milk Program, consumed 7 percent more milk during a representative 24-hour period than children attending other schools. Almost 29 percent of children in Special Milk Program schools drank milk other than that normally served as part of the plate lunch; only 16 percent of the children in schools with milk services but not under the Special Milk Program drank extra milk.

ANDREWS, R. A., AND FRICK, G. E. THE SOIL BANK PROGRAM IN COOS COUNTY, N.H. N.H. Agr. Expt. Sta. Bul. 468, 51 pp., illus. June 1960. (Agr. Res. Serv. cooperating.)

Conservation Reserve Program has not changed total agricultural production in the county significantly. Only a few commercial farms are enrolled in the program. Most of the acreage came from uneconomic units. Total income to the county remains the same. Expenditure of income will change, with more spent on consumer goods and less on farm supplies and services. Nonparticipating farmers face increased costs through reduction in sources of supplemental hay for feed and of land for expanding farm size.

BARRY, GOODLOE, REINBOLD, T. D., AND ENGER, M. R. EVALUATION OF NEW CONTAINERS FOR SCHOOL MILK. U.S. Dept. Agr. Mktg. Res. Rpt. 407, 46 pp., illus. June 1960.

Evaluates two milk containers recently introduced in American schools: Tetrahedral paper container and the 5-gallon dispenser can. Both tetra containers and dispenser cans reduced the costs of packing milk. There was little to choose between the tetra and the conventional ½-pint containers in the serving operation; serving milk from cans required substantially more labor and equipment.

BAUDER, WARD W. IOWA FARM OPERATORS' AND FARM LANDLORDS' KNOWLEDGE OF, PARTICIPATION IN AND ACCEPTANCE OF THE OLD AGE AND SURVIVORS INSURANCE PROGRAM. Agr. and Home Econ. Expt. Sta., Iowa State Univ. of Sci. and Technol. June 1960. (Agri. Mktg. Serv. cooperating.)

Purposes of the study were to find out to what extent farm operators and farm landlords were participating in OASI, their knowledge and opinions of it, what changes they recommend in the program, and the retirement plans of operators and landlords 50 years of age or older.

BLAKE, HELEN T., AND FRIEND, LLOYD F. MILK DATING REGULATIONS—THEIR EFFECT ON MILK DISTRIBUTION AND MERCHANDISING PRACTICES. U.S. Dept. Agr. Mktg. Res. Rpt. 415, 36 pp., illus. July 1960.

Milk producers, distributors, and consumers in many localities are affected by regulations that require dating of milk cartons and bottle caps. This report describes these regulations and some of their effects. Researchers studied milk distributing practices in 34 areas enforcing some form of dating on milk containers and analyzed practices in 8 of the areas.

BOLTON, B. INCOME AND RELATED CHARACTERISTICS OF RURAL HOUSEHOLDS IN THE CENTRAL LOUISIANA MIXED FARMING AREA. La. Agr. Expt. Sta. D.A.E. Cir. 257, 91 pp., illus. Mar. 1960. (Mimeographed.) (Agr. Res. Serv. cooperating.)

Almost a third of the open-country households studied were rural nonfarm. A fourth of these families received less than \$1,000 money income in 1956, and slightly more than half received less than \$2,000. Low incomes tended to be heavily concentrated among Negro families, families with household heads over 54 years of age, those with household heads who had completed 4 years of schooling or less, and those retired, unemployed, or receiving welfare. About a third of the farms were commercial farms without nonfarm income, and the rest were part-time or residential units.

BOWLES, GLADYS K., HOERMANN, SIEGFRIED, AND ROHRER, WAYNE C. POPULATION OF THE NORTH-EAST. GROWTH, COMPOSITION, AND DISTRIBUTION, 1900-1950. Md. Agr. Expt. Sta. Bul. 468, 107 pp. illus. (Agr. Mktg. Serv. cooperating.)

Between 1900 and 1950 population of the 12 States from Maine to West Virginia grew at a rate of 1.3 percent. By 1950 the area had 44.1 million people; it is conceivable that it could have more than 60 million people in 1975. Proportion of foreign-born white persons decreased between 1900 and 1950, and proportions of nonwhite and of native-born white increased.

BURK, MARGUERITE C. CONSUMPTION OF PROCESSED FARM FOODS IN THE UNITED STATES. U.S. Dept. Agr. Mktg. Res. Rept. 409, 47 pp. June 1960.

Proportion of foods commercially processed beyond the minimum necessary for retail sale as fresh or raw rose from 25 percent in 1923 to 35 percent in 1954; proportion of foods handled by marketing agencies rose from 80 percent to 91 percent. Use of frozen foods increased ninefold and of canned foods 275 percent. Increases in income had more effect on use of frozen foods, and perhaps baked goods, than on other processed forms.

CAMP, THOMAS H. BETTER LOADING METHODS FOR TRUCK SHIPMENTS OF PEACHES IN TUB-TYPE BASKETS. U.S. Dept. Agr. Mktg. Res. Rpt. 420, 20 pp., illus. August 1960.

¹State publications may be obtained from the issuing agencies of the respective States.

The alternately inverted loading method can be used effectively for motortruck shipments of fresh peaches packed in $\frac{1}{2}$ -, $\frac{3}{4}$ -, and 1-bushel baskets. The main advantage of this method over the conventional upright load is that it is possible to get more containers in the same space and thus reduce transportation and refrigeration costs per basket. Fruit bruising was not significantly greater in the inverted baskets.

CHIAPOGAS, PETER G., AND HALE, PHILIP W. PREPACKAGING EARLY CALIFORNIA POTATOES AT POINT OF PRODUCTION. U.S. Dept. Agr. Mktg. Res. Rpt. 401, 20 pp., illus. June 1960.

California White Rose potatoes, prepackaged and shipped in either 10-pound paper bags with mesh windows or 10-pound polyethylene bags, arrived at eastern markets in good condition. Total costs of packing, loading, and transporting were about the same for both kinds of bags. During a 7- to 9-day rail shipment the average weight loss in the paper bags was 7 ounces (4 percent) and only 1.3 ounces (0.8 percent) in the polyethylene bags.

CHRISTENSEN, R. P., AND MICKA, E. S. THE CONSERVATION RESERVE PROGRAM IN MAINE. EFFECTS IN AROOSTOOK, FRANKLIN, AND KENNEBEC COUNTIES. U.S. Agr. Res. Serv. ARS 43-123, 31 pp., illus. June 1960.

Reports findings from field surveys made to learn about effects of the Conservation Reserve Program in Aroostook County and in Franklin and Kennebec Counties in Maine. These surveys were made after farmowners had applied for participation in the 1959 program. Reductions in crop production, labor, fertilizer, and other resources purchased annually occurred on farm of participants. Farmowners participated because they wanted to retire or reduce the size of their operations. Nonparticipants said that rental payments were not high enough to make participation profitable.

COOPER, M. R., AND McRAE, R. H. THE AMERICAN COTTON BALE PACKAGE AND OUR FOREIGN MARKETS. U.S. Dept. Agr. AMS-386, 19 pp. June 1960. (Agr. Mktg. Serv. and Foreign Agr. Serv. cooperating.)

Contains major findings of an extensive study on the shortcomings of the U.S. cotton bale package as received in foreign markets. Includes information on causes and effects of these shortcomings and on means of reducing or eliminating them.

DAVIS, E. G., JOHNSON, H. A., AND HAREN, C. C. URBANIZATION AND CHANGING LAND USES. A BIBLIOGRAPHY OF SELECTED REFERENCES, 1950-58. U.S. Dept. Agr. Misc. Pub. 825, 212 pp. May 1960.

Provides a sampling of available materials from all parts of the United States for the years 1950 through 1958, together with selections from Canada, Great Britain, and a few other countries when these items seem to be applicable to conditions here. No effort was made to provide complete coverage on any subject or any region.

DOMINICK, BENNETT A., JR. RESEARCH IN RETAIL MERCHANDISING OF FARM PRODUCTS—APPRAISAL OF METHODS AND ANNOTATED BIBLIOGRAPHY. U.S. Dept. Agr. Mktg. Res. Rpt. 416, 46 pp. July 1960.

This report constitutes an appraisal and summary of published research directly related to methods used in retailing farm products from August 1946 to September 1958. General objective of the more than 200 reports published on this subject was to determine the effectiveness of specific methods in increasing sales of and demand for farm products.

EMORY, WILLIAM, AND WOLF, JACK S. A STUDY OF PRACTICES AFFECTING THE USE OF MAJOR VEGETABLE OILS FOR REFINING AND PROCESSING. Graduate School of Bus. & Pub. Admin., Washington Univ. July 1960. (Agr. Mktg. Serv. cooperating.)

An analysis of the major segments of the vegetable oilseed and vegetable oil industries in the United States. It draws together information concerning the economic, technological, and managerial conditions and developments in these industries.

ENOCHIAN, ROBERT V. MARKETING FROZEN BREAD: A PRELIMINARY REPORT. U.S. Agr. Mktg. Serv. AMS-395, 15 pp., illus. August 1960.

Distributing bread in frozen form rather than in the conventional way could reduce costs 2 cents a pound-loaf. Economies in production and distribution can more than offset added cost of freezing. But acceptance of frozen product by wholesale baker, retailer, and consumer has to be considered.

FAVER, W. H., JR., WOODALL, C. E., AULL, G. H., AND TAYLOR, C. C. THE IMPACT OF ECONOMIC CHANGE ON LOCAL GOVERNMENT IN SOUTH CAROLINA. S.C. Agr. Expt. Sta. AE 189, 58 pp., illus. Jan. 1960. (Mimeographed.)

Rapid economic and sociological change in South Carolina has disrupted the rural setting for which most of its local government machinery was designed and present machinery is overburdened with increasing dependence on State and Federal aid. The nature and origin of major problems facing local government are examined and some of the more immediate problems are brought into focus.

FOLZ, WILLIAM E., AND MANCHESTER, ALDEN C. CHAINSTORE MERCHANDISING AND PROCUREMENT PRACTICES. U.S. Dept. Agr. Mktg. Res. Rpt. 417, 24 pp., illus. July 1960.

Buying and merchandising practices of retail foodstores have been changing rapidly, and many of the large independent supermarkets have organized so that they compete with the big chains. Direct buying of fruits and vegetables from shipping points has become available to practically all but the smaller unorganized stores. Direct buying from shippers is not likely to go higher than 50 to 60 percent of the total volume of fresh fruits and vegetables; the rest will continue to be bought at terminal markets.

GINN, JOHN L., AND HALE, PHILIP W. PACKAGING CALIFORNIA CAULIFLOWER. U.S. Dept. Agr. Mktg. Res. Rpt. 414, 36 pp., illus. July 1960.

Of several methods studied, the cheapest way to pack and ship cauliflower from California to eastern markets was to trim it fully, prepackage it by overwrapping with transparent film, and ship it in fiberboard boxes. Most expensive was the bulk pack in "pony" crates. Savings resulted mostly from trimming off heavy wrapper leaves and packing and shipping only the edible curd.

HALE, PHILIP W., AND STOKES, DONALD R. PREPACKAGING CALIFORNIA GRAPES AT SHIPPING POINT. U.S. Dept. Agr. Mktg. Res. Rpt. 410, 35 pp., illus. July 1960.

Fresh table grapes prepackaged in California arrived at eastern markets in as good condition as grapes shipped in bulk boxes. Consumer packages also protected grapes from damage when customers handled them in retail stores, provided a more sanitary method of display, and reduced retail labor requirements and spoilage losses. Eight kinds of packages were evaluated.

HAVAS, NICK, GRUBBS, VIOLET DAVIS, AND SMITH, HUGH M. COMBINING KINDS OF RETAILER PROMOTIONS. EFFECT ON SALES OF SELECTED FOOD PRODUCTS. U.S. Agr. Mktg. Serv. AMS-397, 16 pp., illus. August 1960.

When foods were promoted at retail by three methods at the same time, the increase in sales exceeded the sum of the increases in sales when each kind of promotion was used separately. Thirty promotions using 1, 2, or 3 of the selling methods were studied in 12 Boston food supermarkets.

HINDS, JAMES F., AND MYERS, MARDY. EVALUATION OF PROMOTIONAL MATERIALS ON HOME DELIVERY MILK ROUTES, CUMBERLAND, MD. U.S. Agr. Mktg. Serv. AMS-394, 14 pp., illus. August 1960.

Specific types of promotional materials were randomly distributed to households. Analyses of sales for a non-promotion base period and the test period for home delivery routes receiving the promotional materials and for similar routes receiving no promotional materials revealed only slight differences in sales of specified dairy products. This type of promotion is considered to be of light intensity in time, effort, and cost relative to promotional and merchandising practices normally used for these dairy products.

HUNTER, J. SCOTT. CONSUMER PREFERENCES AMONG PULP-FORTIFIED AND UNFORTIFIED GRAPE-FRUIT JUICES FROM RED AND WHITE FRUIT. U.S. Dept. Agr. Mktg. Res. Rpt. 398, 23 pp. May 1960.

Canned juice from red grapefruit sometimes becomes discolored when unfortified. Agricultural Research Service has developed a method of fortifying the juice with the pulp from the fruit to prevent discoloration. A market test of fortified juice indicated that it is acceptable to consumers. It may provide an additional market for red grapefruit and give consumers a slightly more nutritious juice.

KANEL, D. OPPORTUNITIES FOR BEGINNING FARMERS. WHY ARE THEY LIMITED? Nebr. Agr. Expt. Sta. Bul. 452 (North Central Regional Pub. 102), 27 pp., illus. May 1960. (Agr. Res. Serv. cooperating.)

Since World War I, opportunities for beginning farmers have been limited. In 1945-54, only 16 percent of the farms in 13 North-Central States became available to beginning farmers, though 31 percent were vacated by older farmers. Farm enlargement accounted for the resulting decrease of 15 percent. Because many young men lack savings, access to capital, and experience as farm managers, they are not able to compete successfully for farms, and must seek nonfarm jobs.

KRIESBERG, MARTIN, AND CROSSED, CHARLES. COST CONTROL IN RETAIL FOOD STORES BY USE OF WHOLESALESAERS' ACCOUNTING SERVICES. U.S. Dept. Agr. Mktg. Res. Rpt. 411, 38 pp.

Wholesaler handling of store accounting for associated retailers is a significant development in wholesaler-retailer cooperation. The service provides timely information on store operation and, hence, opportunities to increase retailer efficiency. Accounting statements show cost of goods sold, operating expenses, and net earnings of the store.

MCALLISTER, C. E., AND CLARKE, D. A., JR. CLASS III MILK IN THE NEW YORK MILKSHED: IV. PROCESSING MARGINS FOR MANUFACTURED DAIRY PRODUCTS. U.S. Dept. Agr. Mktg. Res. Rpt. 419, 102 pp., illus. August 1960.

Net returns from the manufacture of dairy products from class III milk in the New York-New Jersey milkshed remained relatively stable during the 10-year period studied. This report is fourth in a series dealing with pricing of class III milk in this milkshed.

MAIER, F. H., HEDRICK, J. L., AND GIBSON, W. L. THE SALE VALUE OF FLUE-CURED TOBACCO ALLOTMENTS. Va. Agr. Expt. Sta. Tech. Bul. 148 (Southeast Land Tenure Res. Committee Pub. 35), 51 pp. Apr. 1960. (N.C. Agr. Expt. Sta. and Agr. Res. Serv. cooperating.)

This is a study of the market value of flue-cured tobacco allotments. Data were obtained from three producing areas—Pittsylvania County in the Piedmont of south-central Virginia; Greene, Wilson, and Pitt Counties in the coastal plain of east-central North Carolina; and Forsyth and Guilford Counties in the Piedmont of north-central North Carolina—for 1954-57. During the last 3 years of this period, tobacco allotments were cut successively 5, 12, and 20 percent below the previous year's allotment.

MAIER, F. H., MATTLAND, S. T., AND BOWLES, G. K. THE TENURE STATUS OF FARMWORKERS IN THE UNITED STATES. U.S. Dept. Agr. Tech. Bul. 1217, 91 pp., illus. July 1960.

Attempts to answer these major questions: Why have owner-operators not made up a larger proportion of the adult male agricultural work force? After the 1930's, what forces reversed the previous half-century trend away from owner-operated family farms? What farm-tenure developments may be expected in the future?

METZLER, W. H., AND SARGENT, F. O. INCOMES OF MIGRATORY AGRICULTURAL WORKERS. Tex. Agr. Expt. Sta. Bul. 950, 12 pp., illus. Mar. 1960. (Agr. Res. Serv. cooperating.)

Incomes of migratory workers in southern Texas during 1956 averaged \$781 per worker—male heads averaged \$1,145, average earnings per family, varying with size, averaged \$2,208. Workers averaged 131 days work during 1956.

MULLINS, T. PRODUCTION PRACTICE AND COSTS AND RETURNS FOR MAJOR ENTERPRISES ON RICE FARMS IN THE DELTA AREA OF MISSISSIPPI. Miss Agr.

Expt. Sta. Bul. 595, 24 pp., illus., May 1960.
(Agr. Res. Serv. cooperating.)

Modern rice farming was extended to the Mississippi Delta immediately after World War II. At the outset, the cultural practices used in growing rice on the heavy clays of the Mississippi Delta were largely on a trial and error basis. These soils produce at high levels when well managed. Farmers are using various methods of land preparation and seeding and different rotation systems involving rice and other crops to cope with new problems.

PARTENIHEIMER, E. J., AND ELLIS, T. H. COSTS AND RETURNS FROM CROP PRODUCTION IN THE LIMESTONE VALLEY AREAS OF ALABAMA. Ala. Agr. Expt. Sta. Mimeo. Rpt., 68 pp. Feb. 1960.
(Agr. Res. Serv. cooperating.)

Presents information on input-output relationships, costs, and returns for the major crops grown in the Limestone areas of northern Alabama. Two types of crop budgets represent existing and improved practices, the latter based on what is currently done by the "best" farmers in the area.

PURCELL, MARGARET R. NONFAT DRY MILK PACKAGED FOR HOUSEHOLD USE. MARKETING PRACTICES AND COSTS OF MANUFACTURE AND DISTRIBUTION. U.S. Dept. Agr. Mktg. Res. Rpt. 403, 49 pp. June 1960.

Farmers received 15 cents of each dollar spent for instant nonfat dry milk in December 1958. The rest of the consumer's dollar for this product was divided as follows: Processors, 14 cents; distributors (for instantizing, packaging, advertising, and distributing product), 48 cents; wholesalers, 5 cents; and retailer, 18 cents.

RADA, EDWARD L. FLORAL WHOLESALING IN SOUTHERN CALIFORNIA. AN ECONOMIC ANALYSIS. U.S. Dept. Agr. Mktg. Res. Rpt. 406, 80 pp., illus. June 1960.

Sales of floral wholesalers in southern California were about \$18 million in 1956 and are increasing at the rate of about 8 percent a year. Local growers produced 88 percent of the commodities sold. Firms selling foliage plants and cut flowers such as gladiolus, carnations, stock, and chrysanthemums are increasing in size and number; wholesalers of other cut flowers are declining in number and in their share of total sales.

TAYLOR, C. C., AULL, G. H., WOODALL, C. E., AND FAVER, W. H., JR. SUGGESTED PROCEDURES FOR THE ASSESSMENT OF FARM REAL ESTATE IN SOUTH CAROLINA. S.C. Agr. Expt. Sta. AE 188, 20 pp. Jan. 1960. (Mimeographed.) (Agr. Res. Serv. cooperating.)

Procedure outlined, designed as a flexible general guide for assessment of rural property, represents only the minimum recommended action but is designed so that additional refinements may be added within basic framework.

U.S. AGRICULTURAL MARKETING SERVICE. MEAT CONSUMPTION TRENDS AND PATTERNS. U.S. Dept. Agr. Handb. 187, 67 pp., illus. July 1960.

Summarizes previously published findings on meat consumption for use of extension personnel, market researchers in the food industries, and others concerned with market development.

WEIDENHAMER, MARGARET. HOMEMAKERS' USE OF AND OPINIONS ABOUT EGGS. U.S. Dept. Agr. Mktg. Res. Rpt. 405, 77 pp., illus. July 1960.

Homemakers rate eggs as most healthful of the common breakfast foods. When they think of a substantial, or even medium-sized breakfast, they think of eggs. Many homemakers feel that people who are not engaged in heavy physical labor and people who are not overweight do not need a substantial breakfast. If these homemakers could be convinced that such people need a "good" breakfast, they would automatically include eggs in their breakfasts.

WILLIAMS, WILLARD F., AND UVACEK, EDWARD. PRICING AND COMPETITION OF BEEF IN LOS ANGELES. U.S. Dept. Agr. Mktg. Res. Rept. 413, 114 pp., illus. [July 1960]

Basic changes in beef production and marketing have raised new problems for meat wholesaling and retailing industries in Los Angeles, and further adjustments in the marketing system are needed. Los Angeles was chosen for a market "case study" to show adjustments that have followed development of supermarket retailing, and rapid growth of the commercial cattle-feeding industry in the West. Such changes have been especially evident in that area, but the findings will be useful in other areas where similar changes have taken place.

Statistical Compilations

ROYSTON, REGINALD, HOLMES, IRVIN, AND PARK, EARL L. FRUITS AND TREE NUTS. BLOOM, HARVESTING, AND MARKETING DATES, AND PRINCIPAL PRODUCING COUNTIES, BY STATES. U.S. Dept. Agr. Handb. 186, 125 pp., illus. July 1960.

U.S. AGRICULTURAL MARKETING SERVICE. COMMERCIAL HATCHERY PRODUCTION, BY STATES AND GEOGRAPHIC DIVISIONS, 1950-59, REVISED ESTIMATES. U.S. Dept. Agr. Statis. Bul. 267, 24 pp. July 1960.

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